354.1 Shiloh Road
Interchange
Project, IR 90-
8(114)443,
Yellowstone
County, Montana

FHWA-MT-EIS-92-01-D

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

YELLOWSTONE COUNTY, MONTANA

DRAFT ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration

and

State of Montana
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TO ALL INTERESTED GOVERNMENT AGENCIES AND THE PUBLIC

The enclosed Draft Environmental Impact Statement (DEIS) for the Shiloh Interchange, IR 90-8(114)443, is submitted for your review in accordance with 23 CFR 771.123 (NEPA) and ARM 18.2.241-243 (MEPA), inclusive. The DEIS documents the extensive studies that have occurred during the development of this project. Every effort has been made to expedite the preparation of the environmental document. Consequently, it is imperative that the Montana Department of Transportation receive your comments before August 24, 1992. All comments should be sent to:

David S. Johnson, P.E.
Preconstruction Engineer
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620

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SHILOH ROAD INTERCHANGE PROJECT

IR 90-8(114)443

YELLOWSTONE COUNTY, MONTANA

D R A F T

ENVIRONMENTAL IMPACT STATEMENT

SUBMITTED PURSUANT TO 42 U.S.C. 4332(2)(c)

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
STATE OF MONTANA
DEPARTMENT OF TRANSPORTATION

5-29-92
DATE OF APPROVAL

Gordon L. Larson
FOR MDT

5-29-92
DATE OF APPROVAL

FOR FHWA

ABSTRACT

This Draft Environmental Impact Statement examines the effects of the proposed construction of a new interchange providing an additional access to Interstate 90 in Yellowstone County, Montana. The main features of the proposed project include construction of four access ramps, an overpass structure, connecting roadways to the Billings urban transportation system and relocation of the existing frontage road. This document presents the purpose and need for the project, the alternatives, the affected environment, and the environmental consequences.

ADDITIONAL INFORMATION

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COMMENTS

Comments on this Draft EIS are due by August 24, 1992 and should be sent to:

David S. Johnson, P.E.
Preconstruction Engineer
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620

SUMMARY

PROJECT DESCRIPTION

The purpose of this Draft Environmental Impact Statement is to assess the effects of the construction of a proposed interchange between Laurel and Billings in Yellowstone County, Montana. Known as the Shiloh Road Interchange project, this project would provide an additional direct access to Interstate 90 (I-90) in the vicinity of the existing Shiloh Road overpass (I-90 milepost 443). Project improvements would include relocation of the South Frontage Road, construction of four access ramps in a diamond-type configuration and construction of a new overpass structure.

MAJOR ACTIONS PROPOSED BY OTHER AGENCIES

There are no major actions proposed by other agencies in the vicinity of the proposed project.

REASONABLE ALTERNATIVES CONSIDERED

The alternatives considered for this proposed project were initially developed from the results of earlier planning studies, field location studies and public input received through the scoping process.

The initial alternatives were analyzed on the basis of the purpose and need for the project. The alternatives development process included extensive analysis to ensure that the alternatives would meet current design standards and operational requirements. Alternatives that did not satisfy the purpose and need for the project were not considered reasonable and were not evaluated in detail.

Alternatives considered for this project include the "No-Build" Alternative and "Build"

Alternatives A, B, C and D. Alternative A would be an interchange located approximately one mile west of the existing Shiloh Road overpass. Alternative B would be an interchange alternative located just west of the existing Shiloh Road overpass. Alternative C would be an interchange utilizing the existing Shiloh Road overpass. Alternative D would be an interchange located just east of the existing Shiloh Road overpass. The locations of the alternatives are shown on Figure 2-1 in the Alternatives Chapter of this document.

During the evaluation of the Alternatives it became apparent that the location of Alternative A was too far from the urban area to satisfy the need for the proposed project. This fact, together with public opposition to an interchange at the Alternative A location led to a decision to drop Alternative A from detailed consideration.

PREFERRED ALTERNATIVE

The Montana Department of Transportation has selected Alternative D, an interchange location approximately 0.5 miles east of the existing Shiloh Road Overpass, as the preferred alternative. The selection was based on the analysis of reasonable alternatives, public and agency comment, and the evaluations presented in this document. The final alternative selection will not be made until all comments on the Draft EIS and from the public hearing have been fully evaluated.

ENVIRONMENTAL IMPACTS

Table S-1 identifies the probable beneficial and adverse impacts of the reasonable alternatives and provides a basis for analyzing the trade-offs among alternatives. The table summarizes information that appears within this document and

Table S-1
SUMMARY OF ENVIRONMENTAL IMPACTS

IMPACT	ALTERNATIVE B		ALTERNATIVE C		ALTERNATIVE D (Preferred)		"NO-BUILD"
Population & Demographics Impacts	Little if any short term effects. Growth inducing tendencies may slightly shift growth patterns westerly.						No Effect
Economic Impacts	Short-term overall benefit from construction spending on labor and materials. Businesses in the project area could be adversely effected during the construction period due to restricted access. Long-term impacts include loss of productive farmland and benefit of improved access inducing growth.						No Effect
Land Use Impacts - Add. R/W (Acres) - Farmland Converted (Acres)	59.0 72.9 (Note: Farmland Converted (acres) exceeds Add. R/W (acres) due to indirect conversion of farmland. See Chapter 4, Land Use Impacts).		51.1 59.2		61.5 61.5		0 0
- Other Considerations	Growth inducing tendencies of the project would result in land use changes. Development of transportation and travel oriented businesses. Beneficial effect on commercial property values. Adverse effect on residential property values.						No Effect
Relocation Impacts - Residential Displacements - Commercial Displacements - R/W Costs	3 1 $523,700		2 1 $658,600		1 0 $493,400		0 0 0
Social Impacts - Minority/Special Populations Affected - Social Cohesion Affected	No No		No No		No No		No No
Air Quality Impacts - Violates Air Quality Standards	No		No		No		No
Noise Impacts - Alt. Specific Projected Leq(h)dBA	Build	No-Build	Build	No-Build	Build	No-Build	
	65-69	51-69	54-69	57-64	59-73	50-72	
Water Quality Impacts	Minor short-term construction related. COE 404 permit would be required for Alt. C construction over Canyon Creek						No Effect
Wetland Impacts	None		None		None		None
Floodplain Impacts	None		Minor; 3 transverse crossings at Canyon Creek.		None		No Effect
Wildlife Impacts	None		None		None		None

Table S-1
SUMMARY OF ENVIRONMENTAL IMPACTS

IMPACT	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D (Preferred)	"NO-BUILD"
Threatened or Endangered Species Impacts	None	None	None	None
Historic and Archeological Preservation	N/A	N/A	No Adverse Effect	None
Hazardous Waste Sites	No sites on EPA's NPL; no RCRA facilities. Each alternative would impact a potential hazardous waste site (fuel storage) requiring field testing prior to R/W acquisition. Alternative D tested, no detection of hazardous waste, fuel storage tank removed.			No Effect
Visual Impacts	Each build alternative would have minor impacts compatible with the existing transitional character of the area. Each build alternative would add connecting ramps where none presently exist. Alternatives B and D would add a new overpass structure, approach fills and connecting roadways where none presently exist.			No Effect
Energy - Savings Gasoline (Gal./yr.)	259,000	336,000	348,000	0
Utilities Impacts - Estimated Utility Relocation Costs	$442,400	$417,660	$472,380	0
Construction Impacts	Construction of any of the build alternatives would result in short-term adverse impacts to air quality, water quality, and noise. Motorists would be inconvenienced due to delays, detours and temporary surfacing.			None

provides a convenient format for comparison of alternatives and impacts. When an impact is expected to be equivalent for several alternatives, the impact is described in one block spanning all of the affected alternatives. Two columns, "Build" and "No-Build" are shown for noise impacts in Table S-1. The values in these columns define the range encountered at various sites comparing the "Build" and "No-Build" conditions by alternatives.

ISSUES OF CONCERN

Issues of concern regarding the proposed action were identified through coordination with agencies and individuals and through the scoping process.

In general, broad support was expressed for the development of the project. Detailed information concerning scoping comments received is on file with the Montana Department of Transportation (MDT) in Helena. The issues identified as being important included:

- Alternative locations considered
- Safety of school children
- Local traffic safety
- Effect on residences and property values
- Effect on businesses
- Project development schedule

MITIGATION

Table S-1 presents a summary of the probable beneficial and adverse impacts of the proposed project. Many of the adverse impacts would be mitigated through the planning and design process. Specific measures have been considered for other impacts. Areas

where probable adverse impacts would be mitigated through planning and design or where specific measures have been considered are summarized below.

- Probable adverse economic impacts would result from the relocation or restriction of access to any business including the loss of agricultural productivity. Mitigation measures include compensation of eligible property owners for the fair market value of their property and compensation to move business property to a new location. Compensation for agricultural land would consider lost earnings resulting from reduced productivity. Access to businesses and residences would be maintained although delays would be expected.

- Land Use Impacts would be mitigated by existing and proposed County policies and regulations. While MDT has no authority to enforce County policies and regulations, implementation would help mitigate land use impacts.

- Relocation assistance provided in accordance with the Uniform Relocation Assistance and Real Property Policies Act of 1970, as amended, would mitigate impacts due to business and residential relocations. Property purchased for right-of-way would be purchased at fair market value.

- Noise barriers are not considered practicable for this project due to access openings that severely limit their effectiveness. Mitigation of noise impacts consists of planning to mitigate future impacts.

- Construction impacts would be short-term and mitigated by use of proper construction practices as defined by MDT standard specifications. Air quality permits would be required for asphalt plants and crushers.

PARTICIPATING AGENCIES

Various federal, state and local governmental agencies participate in the EIS process and have certain areas of responsibility. The discussion below identifies these agencies and their areas of responsibility.

Federal Highway Administration (FHWA)

Lead Federal Agency, Responsible for EIS Compliance with the National Environmental Policy Act (NEPA).

Montana Department of Transportation (MDT)

Lead state agency, responsible for EIS compliance with Montana Environmental Policy Act (MEPA).

U.S. Army Corps of Engineers (COE)

Wetlands, Water of the United States

U.S. Department of Agriculture, Soil Conservation Service

Farmland Protection

U.S. Department of the Interior, Fish and Wildlife Service (USFWS)

Threatened or Endangered Species

U.S. Environmental Protection Agency (EPA)

Wetlands, Hazardous Waste, Air and Water Quality

Montana Department of Fish, Wildlife and Parks

Wetlands, Stream Protection, Fish, Wildlife

Montana Department of Health and Environmental Sciences (MDHES)

Hazardous Waste, Air and Water Quality

Montana Historical Society, State Historic Preservation Office (SHPO)

Archaeological and Cultural Resources

Yellowstone County Board of Planning

Designated Metropolitan Planning Organization (MPO), Transportation Planning

UNRESOLVED ISSUES WITH OTHER AGENCIES

There are no major unresolved issues with other agencies.

OTHER FEDERAL ACTIONS REQUIRED

Other Federal actions would be required for granting permits required for construction. For Alternative C these actions would include a Clean Water Act - Section 404 Permit from the U.S. Army, Corps of Engineers and a Floodplain Permit from the Federal Emergency Management Agency. If hazardous waste sites are identified, coordination will take place with the Environmental Protection Agency.

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CHAPTER 1 - PURPOSE AND NEED FOR ACTION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action involves constructing a new Interstate 90 interchange to provide improved access to the western portion of the Billings, Montana urban area. The proposed interchange would be located in the vicinity of milepost 443, between Laurel and Billings, Montana (Figure 1-1). Because of the existence of the Shiloh Road overpass at this location and the possibility of connection to Shiloh Road (Montana Secondary/FAS 429), the proposed project has been known as the Shiloh Road Interchange.

Construction of the proposed project would involve relocation and realignment of the existing South Frontage Road for a distance of approximately one mile. Four access ramps to Interstate 90 would be constructed in a diamond configuration and the crossroad would be constructed over Interstate 90. One alternative considered (Alternative C) would utilize the existing overpass structure, which would be widened to provide the necessary design features. Other alternatives would require construction of new bridge structures while the existing Shiloh Road overpass would remain to serve local traffic circulation needs. Other project improvements contemplated include: construction of the crossroad connection, intersection channelization, approach road connections, grading, surfacing, drainage facilities, signing and pavement markings, lighting, signalization, roadside obstacle protection, topsoil placement, seeding, irrigation system modifications and necessary utility relocations.

PURPOSE AND NEED FOR ACTION

The primary purpose of the proposed action is to provide improved access to the western portion of the Billings urban area. Improved access is needed to reduce travel

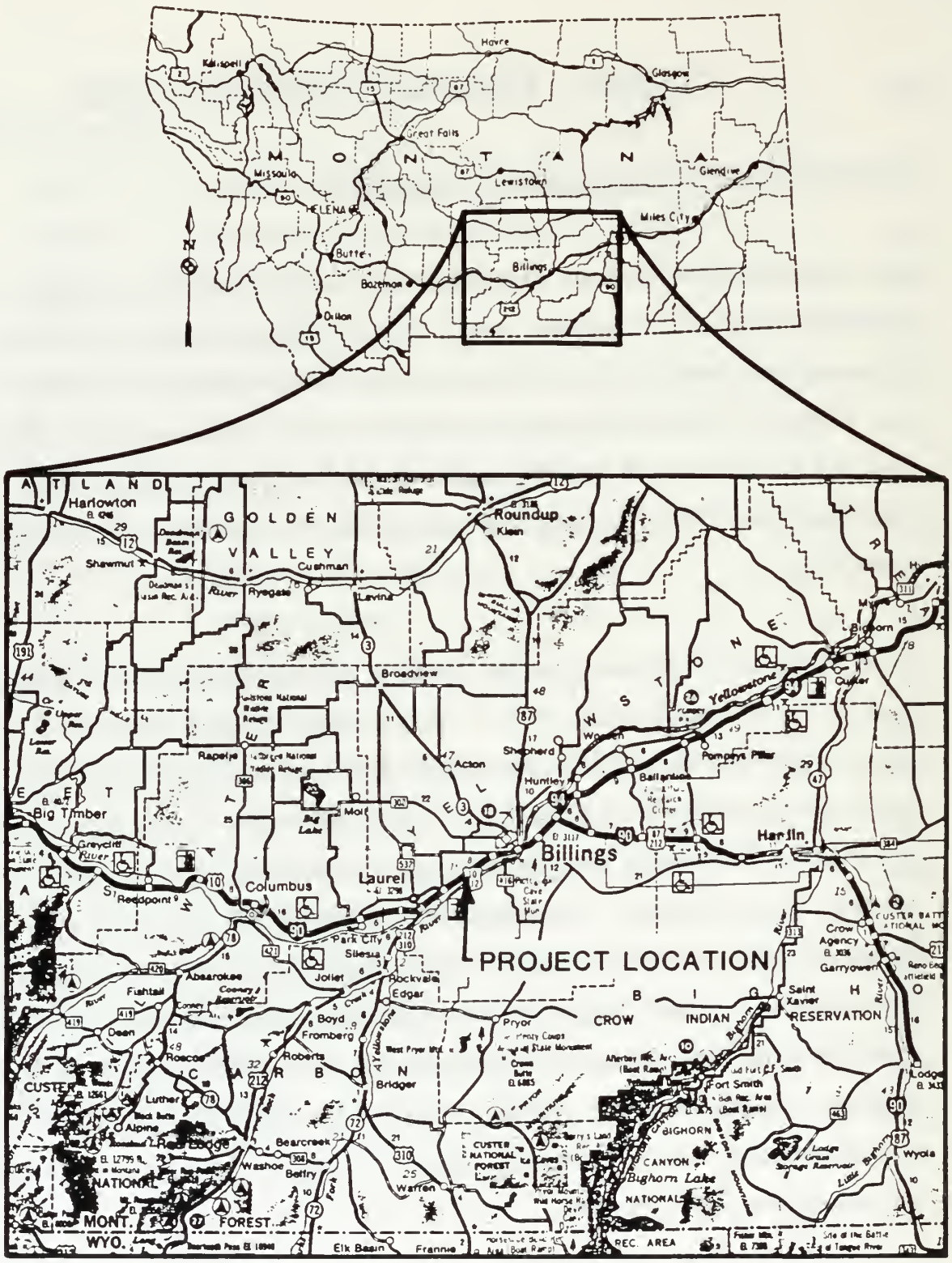


FIGURE 1-1

PROJECT LOCATION MAP

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

times between Interstate 90 and the west end of Billings, and to reduce impacts caused by increasing traffic congestion on King Avenue and at the West Billings Interchange, approximately three miles east of Shiloh Road.

Growth in the western portion of Billings has, in recent history, been the greatest of any portion of the urban area and has the most potential for future growth.[1] Current access to this area is served by the Mossmain Interchange and the West Billings Interchange (Figure 1-2). The Mossmain Interchange is located approximately five miles west of Shiloh Road, too far west of the urban limits to provide primary access to this area. Therefore, the West Billings interchange currently serves as the primary I-90 access to this portion of Billings. It is also the primary Interstate access point for large commercial land areas and regional shopping centers along King Avenue and 24th Street West. It is the highest volume interchange in the Billings area because of this intensive land use.

There are no other I-90 access opportunities in the 8.5 miles separating the West Billings Interchange and the Mossmain Interchange. In addition, the only road links which provide north-south crossings of Interstate 90 are located at Shiloh Road and 56th Street West. Parallel road systems include a frontage road south of Interstate 90 and a grid system of arterial streets and roads north of I-90. The South Frontage Road is a 55 mph facility which serves local access needs and provides minimum delay for I-90 bound traffic. I-90 and Montana Rail Link tracks, which run parallel on the north side, dissect the arterial grid system at approximately a 30 degree angle. I-90 bound traffic from the north area must follow east-west arterials to a point where either one of the interchanges can be accessed via a north-south route. This disjointed routing creates increased travel times for vehicular traffic on the north side of I-90.

1 Mountain Research, Inc., 1985, Employment, Population & Housing Forecasts for the Billings Urban Area 1980-2000

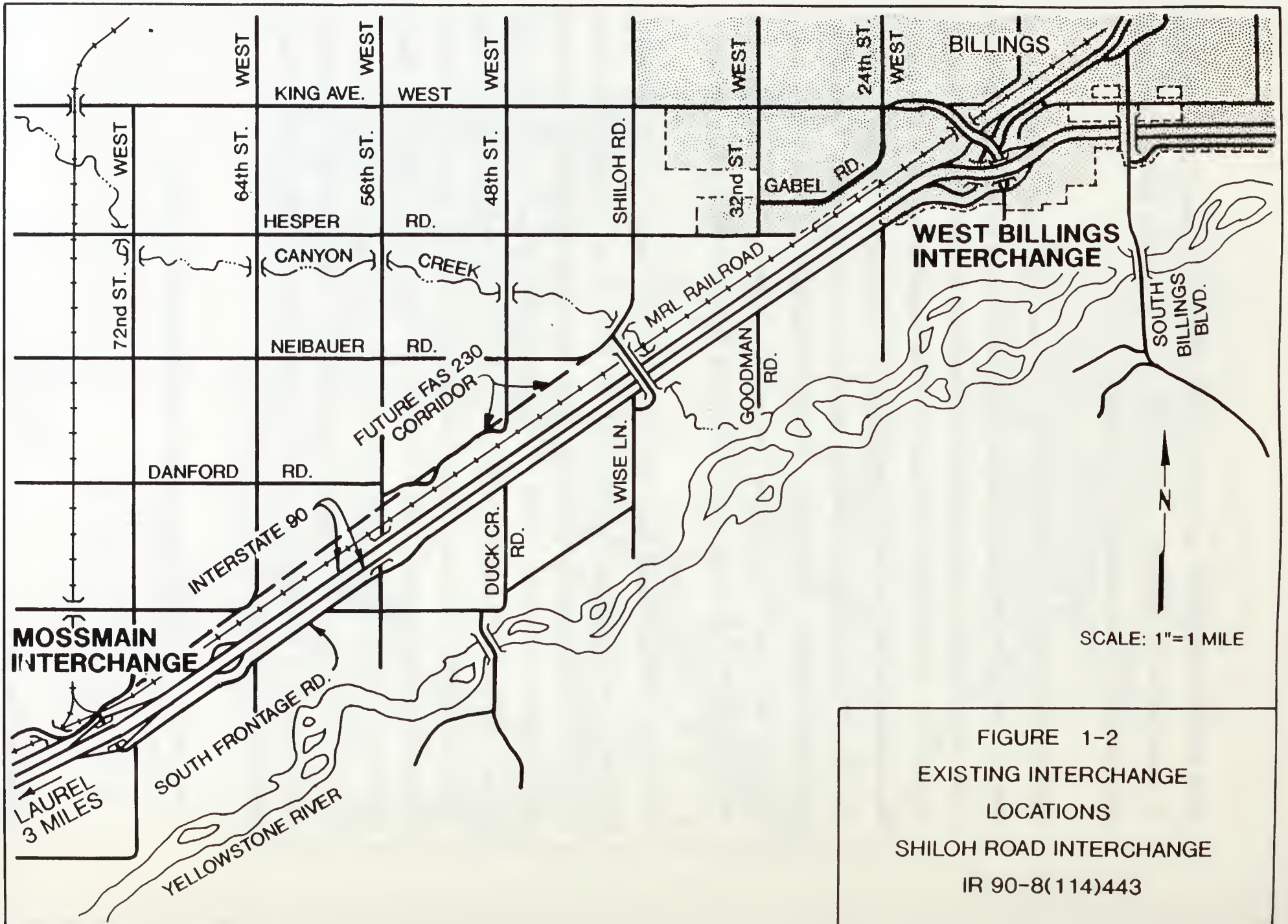


FIGURE 1-2

EXISTING INTERCHANGE

LOCATIONS

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

The proposed interchange would reduce required travel time for a large section of the Billings urban area. Travel times, based on average speeds and intersection delays, were calculated for a number of the primary links which would be served by the proposed interchange and existing street system. From these calculations, the primary service area for a new I-90 Interchange was defined. Figure 1-3 illustrates the direct access service area for the proposed Shiloh Road Interchange.

From socio-economic data contained in the Billings 1990 Transportation Plan, it is estimated that there are currently 4,300 dwelling units with 11,400 people residing in this area. In addition, the direct access service area has a current employment of approximately 2,500 people. Projections set forth in the 1985 Mountain West Research report indicate that this area would employ 3,300 people by the year 2010 and contain a population of 26,000 residing in 10,000 dwelling units.

In addition to the direct I-90 access service area, large commercial areas around King Avenue and 24th Street West would become a secondary service area for the proposed interchange. Future congestion anticipated on King Avenue West would create the need for alternative access for this area. Construction of a future Gabel Road link from the Shiloh Road Interchange area to 32nd Street West and 24th Street West would provide alternative access between I-90 and these large commercial areas.

A. PROJECT STATUS

In 1969, the first formal Billings Urban Transportation Plan was completed by Deluew Cather Company under contract with the Montana Department of Transportation and local governments. That plan detailed, among many projects, the need for a new interchange

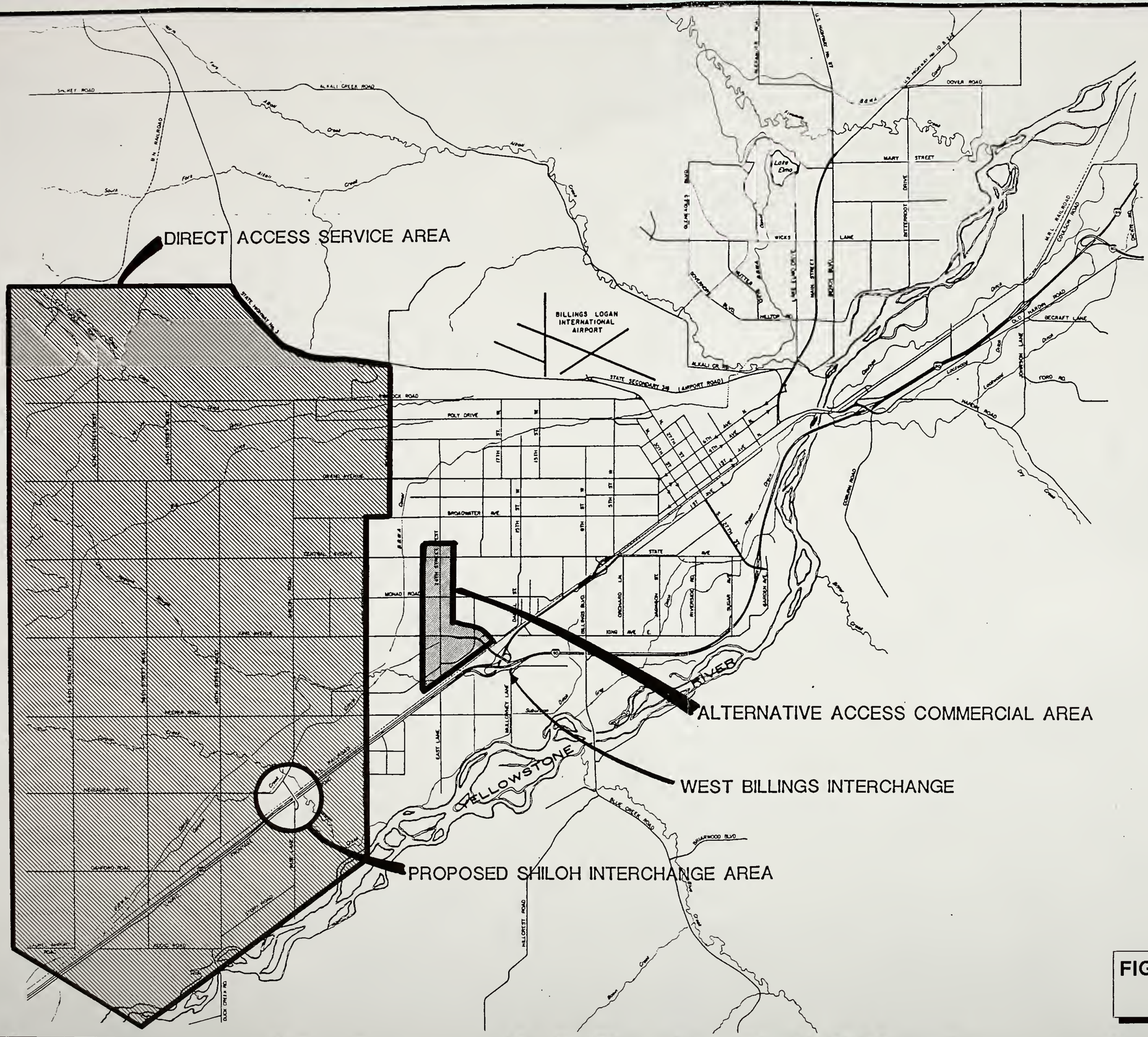


FIGURE 1-3. INTERCHANGE ACCESS AREAS

at Shiloh Road to meet future (1990) traffic demands. This interchange location has been included in every transportation plan and update since 1969. It was also included as a committed project within the 1990 Billings Urban Area Transportation Plan Update.

Specific planning for the location and design of this interchange was initiated by Montana Highway Commission action on March 3, 1988. Overwhelming response by local governments, organizations, businesses and individuals to the Department of Highways' request for nominations for new interchange locations, along with the apparent need for the project, prompted the Highway Commission's decision to include the proposed interchange in its development program. Since that time, the Montana Department of Transportation has retained a consultant to prepare environmental and preliminary engineering documents to evaluate alternative locations and designs.

B. SYSTEM LINKAGE

The proposed interchange links with Shiloh Road, a major north-south arterial. Shiloh Road begins at an intersection with the I-90 South Frontage Road. It proceeds north across an existing overpass of I-90 through an intersection with Neibauer Road, a rural arterial serving farms and residential developments, and continues north approximately five miles to an intersection with Rimrock Road, a major east-west arterial. Between Neibauer Road and Rimrock Road, Shiloh Road intersects five east-west arterial roads: Hesper Road, King Avenue West, Central Avenue, Broadwater Avenue and Grand Avenue. It currently serves as an outer bypass road, facilitating longer distance north-south trips between east-west arterials.

Other street systems and proposed projects having a direct relationship to the proposed Shiloh Road interchange are shown in Figure 1-4 and described below:

South Billings Boulevard Interchange is scheduled for contract letting in 1991. As a new interchange it will provide a new outlet for traffic south of Billings and thus, will increase traffic volumes at the West Billings Interchange.

West Billings Interchange Phase I is currently under design and scheduled for contract letting within a year of the South Billings Boulevard Interchange. This project will improve access to an area south of the interchange; reduce conflicts within the interchange by creating a single urban type intersection beneath the I-90 structures; and improve the overall traffic operations. Design of this project is heavily dependant upon the future existence of the proposed Shiloh Road Interchange, since traffic demand from the west approach to the new urban intersection would be reduced. Design of the intersection's future operation was based on reduced demand that would result from construction of a Shiloh Road Interchange.

West Billings Interchange Phase II will provide ramp modifications from Laurel Road to King Avenue West and will widen King Avenue West to provide a seven lane urban street section extending from the interchange west to 20th Street West. The seven lane section would, as stated in the Capacity and Level of Service section of this document, provide an adequate level of service (LOS) for design year traffic demand if the proposed Shiloh Road Interchange were built. If the "No-Build" alternative were to occur, the new seven lane section would operate at LOS "E".

North Frontage Road, also known as the Gabel Road Extension, would connect to Shiloh Road or to an alternative cross road connection near the proposed Shiloh Road interchange. A project that has been planned and discussed at the local agency level for

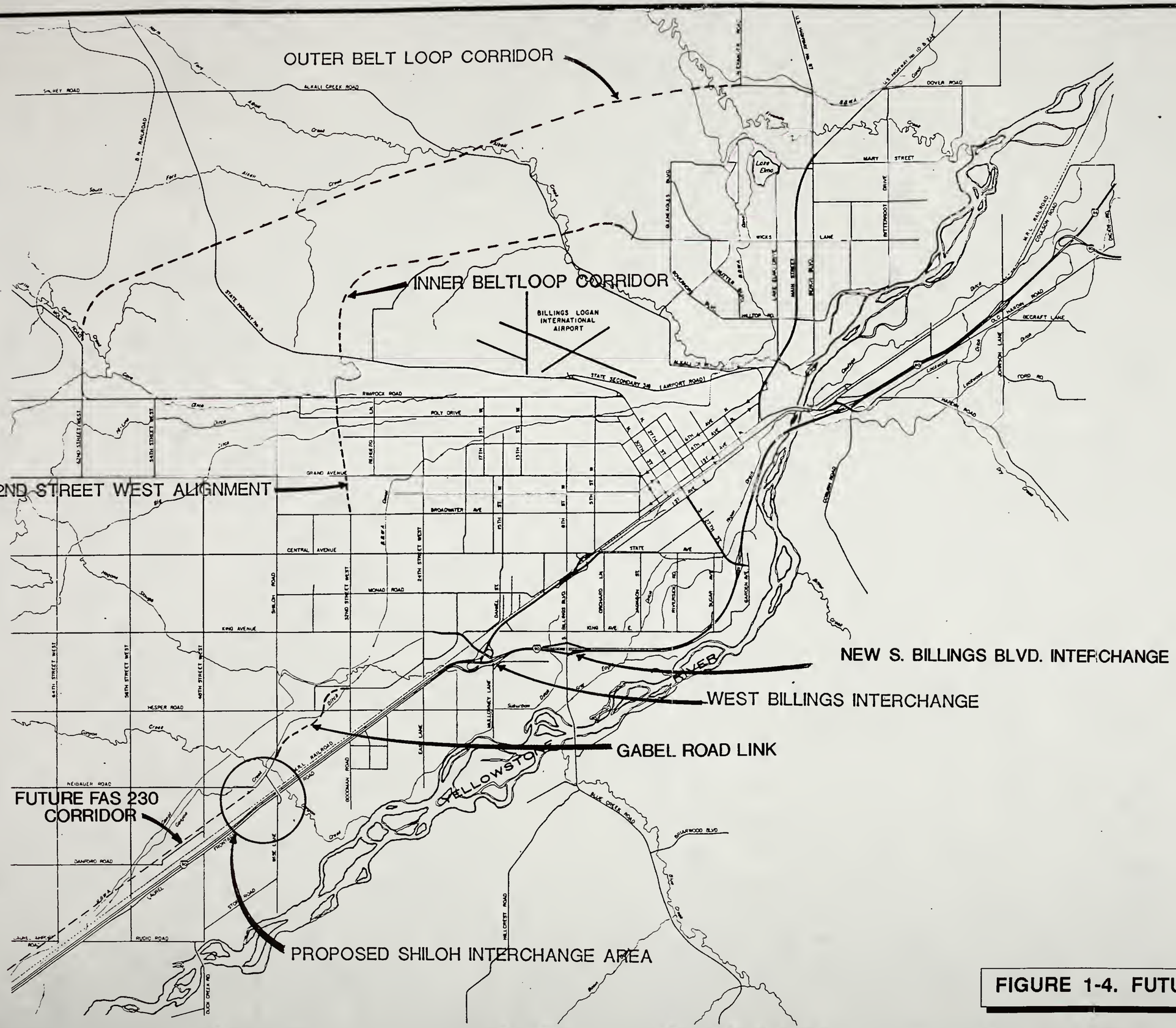


FIGURE 1-4. FUTURE ARTERIAL LINKS

many years, it was included as a future arterial connection in the 1990 Billings Urban Transportation Plan. The purpose of this future route would be to provide alternative access to intensive commercial land development around King Avenue West and South 24th Street West and to complete a connection to 32nd Street West.

32nd Street West is one leg of a future inner belt loop system. Preliminary design of street segments north of Broadwater Avenue that do not currently exist have been completed by the City of Billings. When complete, Shiloh Road and 32nd Street West will serve as the north-south links of the inner belt loop system. Shiloh Road, due to existence of controlled land development along its length, would be able to better serve thru traffic and act as a truck route while 32nd Street West would serve urban traffic with shorter trip length demands. The planned functionality of the inner belt loop, as contained in the 1990 Billings Urban Transportation Plan, could only be achieved by providing Interstate 90 access via the proposed Shiloh Road Interchange.

Montana Secondary/FAS 230 was designated as a proposed future project in May 1982 at the request of the Yellowstone County Commissioners. The proposed route would connect with Shiloh Road near the existing overpass and with 72nd Street West near the Mossmain Interchange. The project was proposed to provide for future transportation needs and serve future development. Although the proposed corridor location is carried by MDT as a future route, the project has not been assigned a priority by county officials, no plans have been developed and no implementation schedule has been established.

C. EXISTING TRAFFIC CHARACTERISTICS

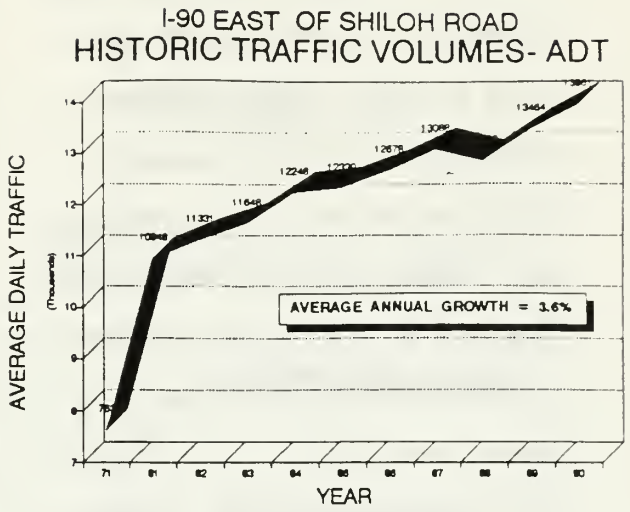
The addition of a new interchange at the proposed Shiloh Road location would create a shift in traffic volumes on the existing system. Because of its location and the complexity of the connecting urban and rural system, benefits and impacts related to traffic volumes

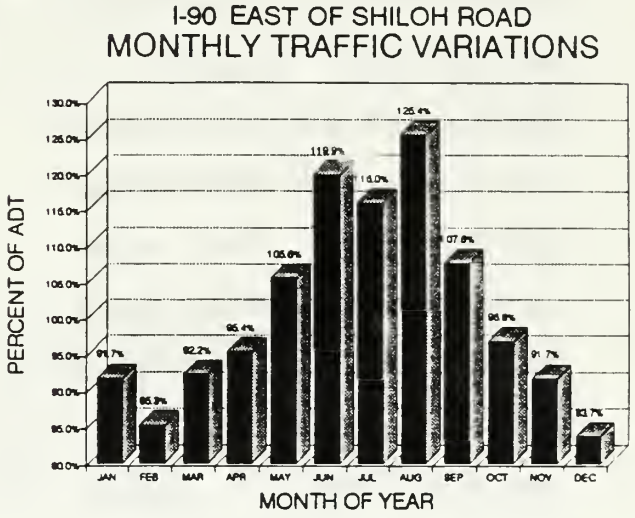
on the system are difficult to quantify other than on an urban transportation planning basis. Traffic volumes presented within this section of the document, therefore relate to potential changes in the existing system attributable to a new interchange at or near the existing Shiloh Road alignment. Alternative locations and designs would provide variations in impacts and would serve variable traffic demands. Therefore, this section of the document identifies the general purpose and need for the project based on transportation plan data, while the Alternatives Chapter of this document recognizes individual traffic variations and relative impacts between each alternative.

Existing and historic traffic volumes on I-90 and affected roads in the project area were provided by the Montana Department of Transportation's permanent count stations A-11 and A-49 and by the Billings-Yellowstone City-County Planning Department. Permanent count station A-11 is located on I-90, Station A-49 is located on the South Frontage Road. Both count stations are located east of the Shiloh Road overpass. In order to fully understand anticipated changes to the existing transportation system that would result from construction of the proposed interchange, existing and historic traffic characteristics on the area system need to be defined. The following section provides a detailed description of traffic volume characteristics of individual roads that would be directly impacted by the proposed interchange.

FIGURE 1-5

Interstate 90 has experienced a relatively stable and constant annual growth rate of 3.6% through the period of record, as seen in Figure 1-5. The average daily traffic (ADT) in 1990 was 13,961. Monthly traffic variations range from 83.7% of ADT in December to 125.4% in August. Daily variation data indicates that traffic volumes peak on Fridays with 111.0% of ADT and Sunday volumes are low at 92.1% of ADT.





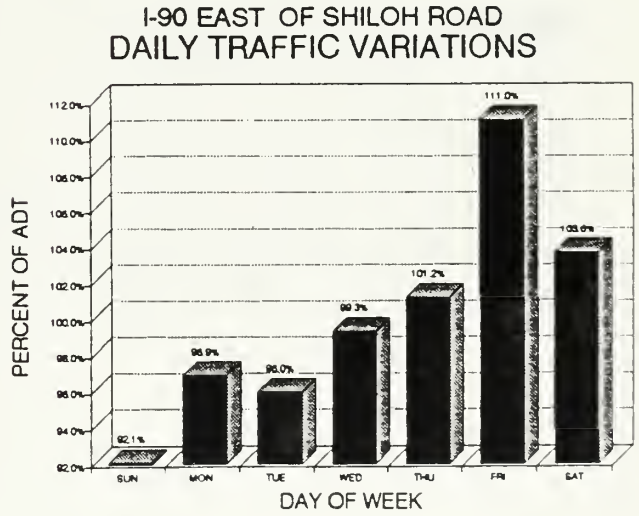
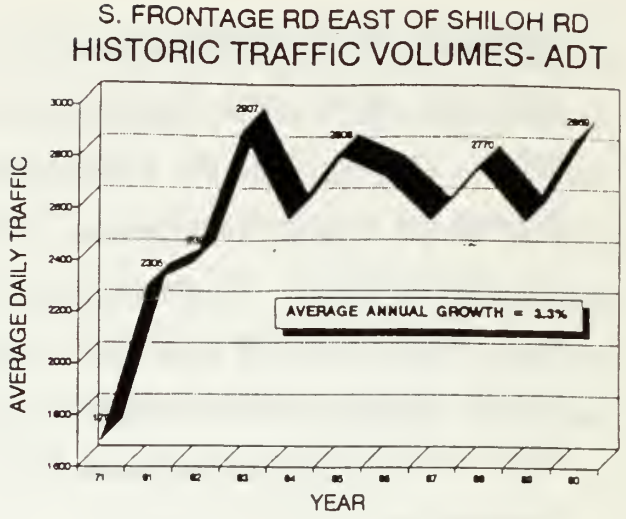
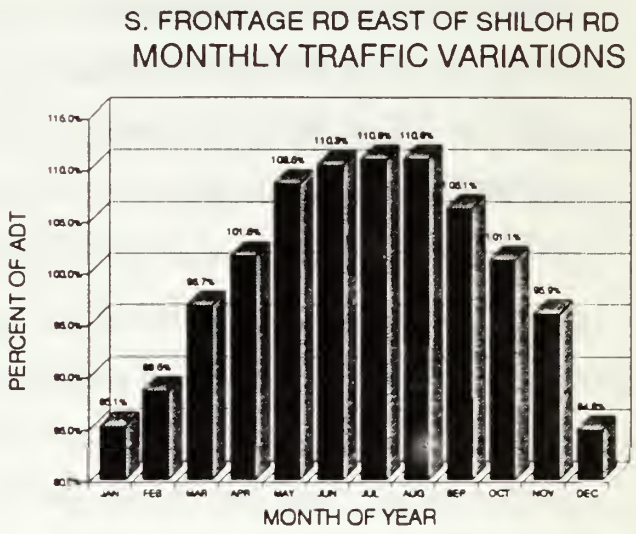
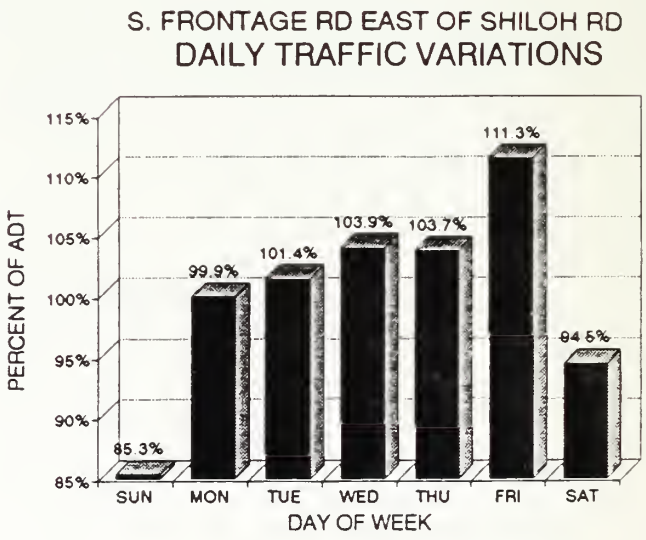


FIGURE 1-6

South Frontage Road had experienced rapid growth from 1971 to 1983. The effects from a downturn in the area economy in 1984 can be seen in the leveling of traffic volumes shown in Figure 1-6. The overall average growth rate through the reporting period was 3.3% annually with 1990 ADT being 2,869. Monthly variations follow the trend of I-90 with December being the low month (84.8% ADT) and July and August being high traffic months (110.8% ADT). Daily traffic variations are also similar except for Saturdays when I-90 has a higher traffic volume due to the economic draw of Billings regionally and because of longer trip lengths on the weekend.

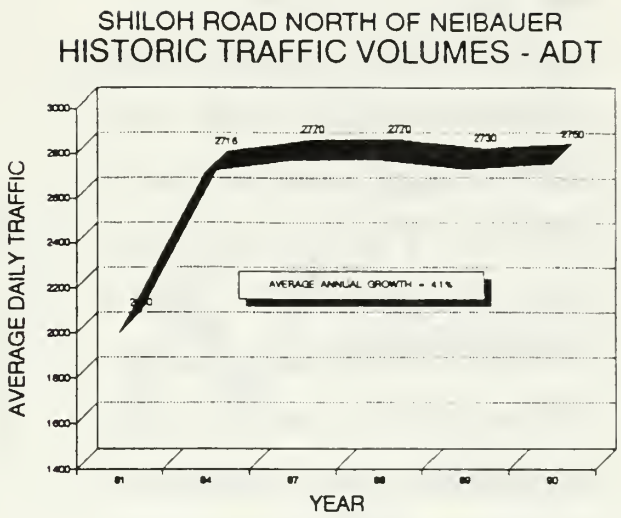


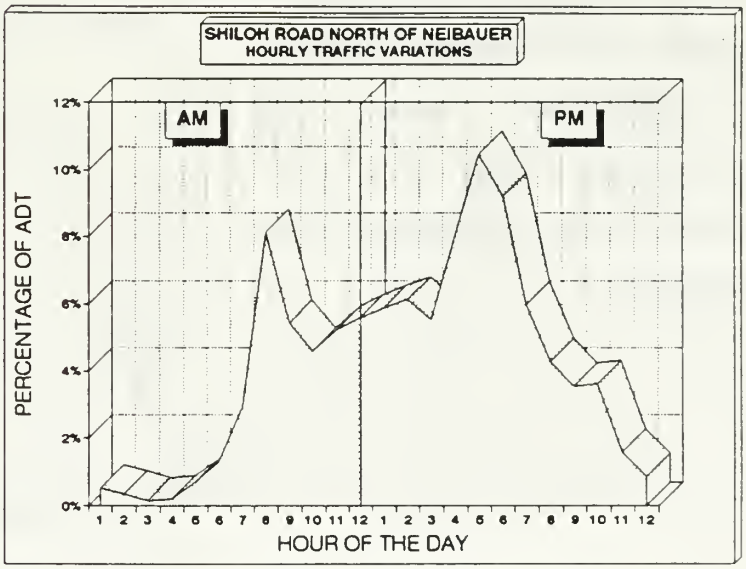




Shiloh Road, north of Neibauer Road, also reflects the economic downturn in the Billings economy in 1984 (Figure 1-7). Traffic growth was stagnant from 1984 to 1990 at approximately 2,700 ADT. The overall annual average growth through the reporting period was 4.1%, with most of the growth occurring before 1984. Hourly traffic variations on Shiloh Road indicate that it is typical of commuter routes with morning and evening peak hours.

FIGURE 1-7

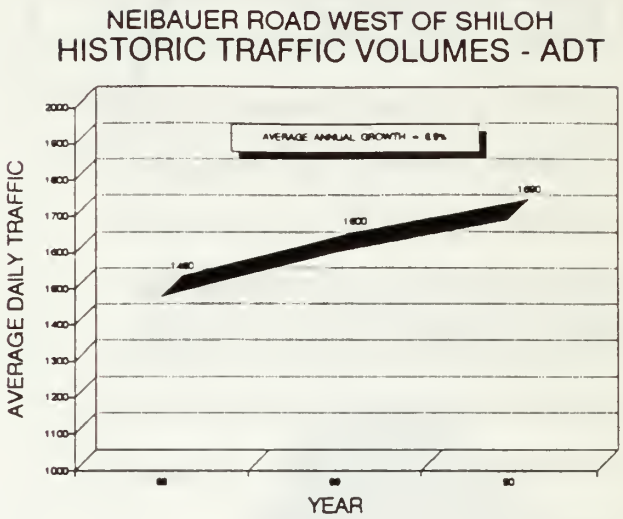


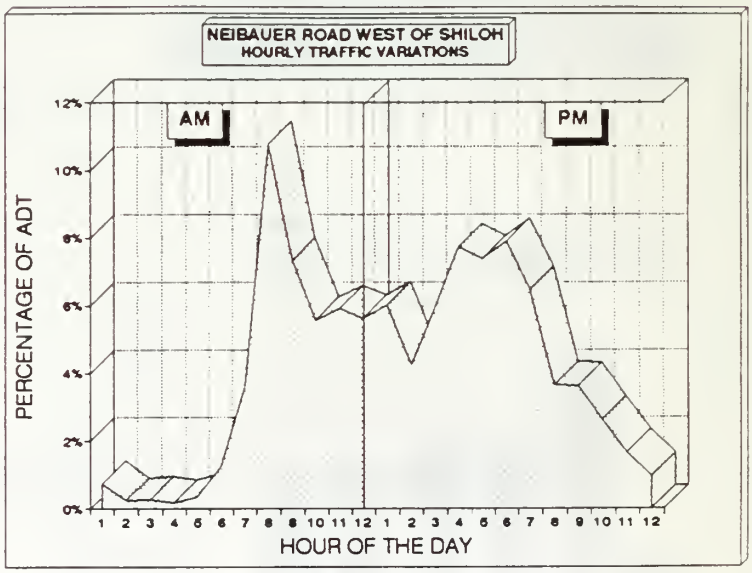


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Neibauer Road is an east-west arterial road in part of the rural arterial grid system north of I-90. It is the first road intersection with Shiloh Road north of I-90. Only three years of data were available on Neibauer Road. The annual average growth rate shown in Figure 1-8 is calculated to be 6.9%. The 1990 ADT is 1,690. An earlier unconfirmed count in 1985 indicated that the ADT was approximately 1,500. Therefore, the average annual growth rate may be closer to 3% than 6% as the limited data would indicate. Hourly traffic variations produce a characteristic morning and evening peak. However, the AM and PM peaks are reversed from Shiloh Road.

FIGURE 1-8

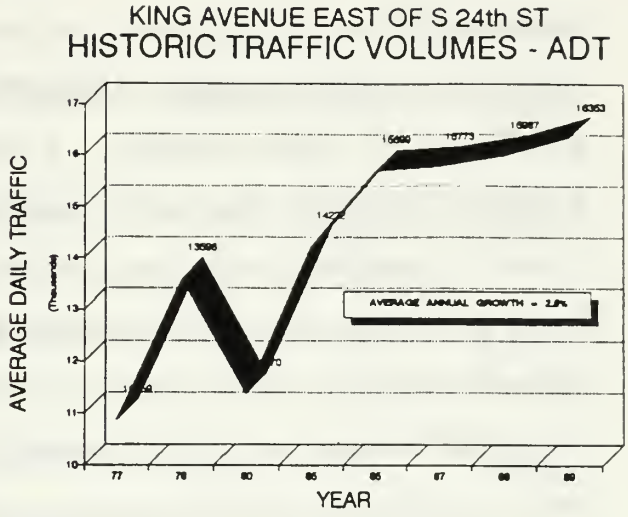


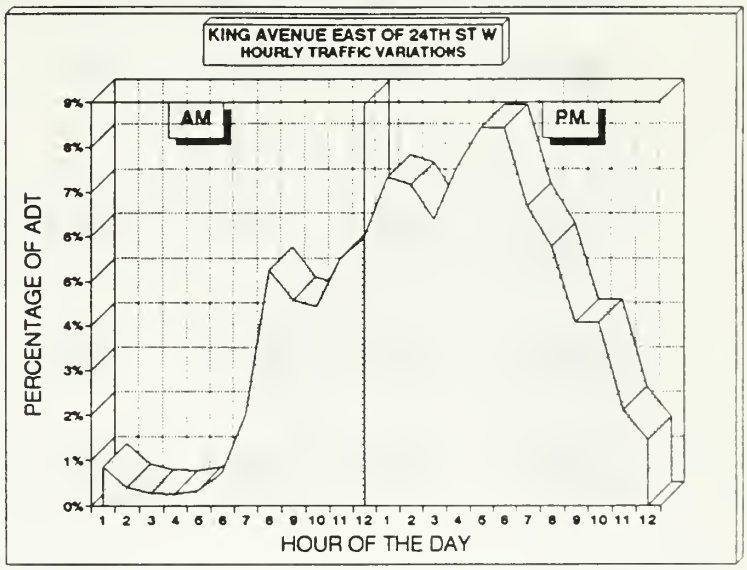


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King Avenue West is a major east-west arterial street beginning at the West Billings interchange and proceeding west past an intersection with Shiloh Road to 72nd Street West. 72nd Street West is due north of, and connects to I-90 at the Mossmain Interchange. King Avenue West has enjoyed a fairly constant history of traffic growth to 1989 levels of 16,353 ADT with the exception of 1980 when localized construction interrupted traffic (Figure 1-9). The average annual growth rate was 2.5% during the reporting period. Hourly traffic variations contain three distinct peaks in the morning, afternoon and evening.

FIGURE 1-9





D. TRAFFIC PROJECTIONS

Two levels of traffic projections were used to identify transportation system needs in the Shiloh Road Interchange project area. A planning level analysis was used in the development of the 1990 Urban Transportation Plan and a design level analysis was completed for traffic projections in the immediate area of the interchange. The Montana Department of Transportation's Urban Planning Section was responsible for performing both levels of traffic analysis. A main frame computer program identified as PLANPAC/BACPAC was used to determine transportation plan volumes. This same system was used to provide route volumes at the design level. Hand adjustments were made to develop turning movements at the proposed interchange for each of the alternative designs. In the evaluation of street system volumes for both the "Build" and "No-Build" alternatives, where documented projections were not available, interpolations based on straight line projections were used. Table 1-1 presents the differences in traffic volumes attributable to the "Build" and "No-Build" alternatives in both the implementation year (1993) and the design year (2013).

TABLE 1-1
SUMMARY OF ANNUAL AVERAGE DAILY TRAFFIC (AADT) PROJECTIONS

	1990	YEAR 1993		YEAR 2013	
	Existing	No Build	w/Interch	No Build	w/Interch
Interstate 90 West of Interchange	13,960	15,200	15,200	23,600	23,600
Interstate 90 East of Interchange	13,960	15,200	17,900	23,600	28,400
I-90 S. Frontage Road West of Interchange	3,150	3,400	3,400	8,100	8,100
I-90 S. Frontage Road East of Interchange	2,700	2,900	1,300	7,400	2,800
Shiloh Road I-90 Overpass	2,150	2,200	5,400	5,800	11,000
Shiloh Road Immediately N. of Neibauer Road	2,500	2,700	6,300	6,200	12,500
Neibauer Road West of Shiloh	1,690	1,750	1,750	3,400	3,400
King Avenue West East of S. 24th St. W.	15,760	17,400	14,300	44,000	38,000
Wise Lane South of S. Frontage Rd.	580	620	620	1,300	1,300

The following implications can be drawn from an examinations of Table 1-1:

Traffic on Interstate 90 east of the proposed interchange would exceed the "No-Build" condition by approximately 18% in 1993 and by 20% in the year 2013 if the project was built.

Traffic on South Frontage Road east of the proposed interchange would be decreased by 55% in 1993 and by 62% in 2013 if the project was built.

If the interchange was built, Shiloh Road traffic north of Neibauer Road would be 133% greater than the "No-Build" volumes in 1993 and 102% greater in 2013. Traffic on the existing Shiloh Road overpass would realize similar increases if the interchange was built at the Alternative C location. If not, the ADT on the overpass would be approximately 800, mostly local circulation traffic.

King Avenue West traffic would be 18% less in 1993 and 23% less in 2013 if the interchange was built.

Specific impacts regarding traffic volume projections for each alternative design are discussed in the Alternatives Chapter of this document.

E. CAPACITY AND LEVEL OF SERVICE

Capacity, as applied to roads and streets, is not meaningful unless it is referenced to a particular level of service. Level of service (LOS) is a means of expressing driver comfort and delay through the use of letter designations. As an example, LOS "A" indicates a free flow condition with no delay and speeds near the design level maximum. LOS "E" would indicate an extremely congested situation with significant delay and speeds near zero. LOS "F" would be a grid lock condition with no perceptible vehicle

movement. Descriptive values for level of service range from "A", being the most desirable, to "F", being the worst or most feared condition. Design levels of service are chosen to insure that a comfortable margin will exist at the end of the projects design life. The design level of service for rural interstate highways is normally LOS "B". On urban interstate highways and freeways, a LOS "C" is acceptable. Urban arterial streets are designed for LOS "C" while a LOS "D" can be tolerated on some local and collector streets.[2]

Level of service analysis techniques are performed differently depending on the facility being analyzed. The 1985 Highway Capacity Manual, FHWA methods were used to calculate level of service values on all of the potentially impacted facilities associated with the proposed interchange. Table 1-2 presents a summary of that analysis.

2 AASHTO, 1990. A Policy on Geometric Design of Highways and Streets.

TABLE 1-2
LEVEL OF SERVICE PROJECTION SUMMARY

	1990	YEAR 1993		YEAR 2013	
	Existing	No Build	w/Interch	No Build	w/Interch
Interstate 90 West of Interchange	A	A	A	B	B
Interstate 90 East of Interchange	A	A	A	B	B
I-90 S. Frontage Road West of Interchange	B	B	B	D	D
I-90 S. Frontage Road East of Interchange	B	B	A	D	B
Shiloh Road I-90 Overpass	C	C	A	D	C
Shiloh Road Immediately N. of Neibauer	B	B	C	C	E
Neibauer Road West of Shiloh	B	B	B	C	C
King Avenue West East of S. 24th St. W.	C	C	C	E	C
Wise Lane South of S. Frontage Rd.	A	A	A	A	A

The following are inferences that can be made from the capacity analysis used in determining the levels of service:

South Frontage Road west of the proposed interchange would reach an unacceptable LOS "D" by the year 2013 whether the proposed project is built or not.

Construction of the proposed Shiloh Road Interchange would eliminate capacity problems on South Frontage Road east of the proposed project in the year 2013 and eliminate the need to reconstruct or otherwise modify the existing roadway.

The existing Shiloh Road overpass would operate at LOS "D" in the year 2013 if the "No-Build" option were chosen and widening of the bridge structure would be required. Construction of the interchange would either provide a widened bridge section or substantially reduce traffic demand depending on the alternative interchange location.

Shiloh Road north of Neibauer Road would have to be reconstructed to provide adequate capacity if the proposed interchange was built. Capacity improvements would be required within a short time after the proposed implementation year 1993. These improvements would also be required shortly after the year 2013 if the "No-Build" alternative was chosen.

Construction of the proposed Shiloh Road Interchange would have a substantial mitigating effect on King Avenue West capacity problems. Projected to operate at a LOS "E" even if a seven lane section on King Avenue is implemented by the year 2013, construction of the proposed interchange would reduce traffic volumes to the extent that LOS "C" could be maintained with the seven lanes planned for King Avenue West.

All of the new road facilities designed and constructed as a part of the proposed interchange would be designed for year 2013 traffic volume demand to the appropriate and specified level of service. Specific capacity and level of service impacts associated with individual alternative locations are discussed in the Alternatives Chapter of this document.

F. SAFETY

The Montana Department of Transportation and the Department of Justice provided accident data for roads within the immediate vicinity of the proposed Shiloh Road Interchange. Table 1-3 summarizes accident numbers and characteristics for data available between the years 1986 and 1989.

Average accident rates for the type of facilities analyzed, according to the Montana Department of Transportation's Planning and Statistics Bureau, are:

Secondary and Rural Roads	=	2.10 Acc/million vehicle miles
to High Average	=	5.54 " " "
Interstate Highway	=	1.07 Acc/million vehicle miles
to High Average	=	2.55 " " "

Accident rates for the four road sections involved appear to be within the range considered average for their class with the exception of Neibauer Road. This section of roadway was one of the top five accident site locations in Yellowstone County in 1990. A 1990 study of this section of roadway has been completed. Proposed improvements

TABLE 1-3
ACCIDENT SUMMARIES

ACCIDENT SUMMARY

INTERSTATE 90, MP 441.7 TO MP 443.7

SECTION LENGTH: 2.00 MILES

AVERAGE ANNUAL DAILY TRAFFIC: 13133

NUMBER OF ACCIDENTS BY YEAR	
1986	6
1987	4
1988	5
1989	7

NUMBER OF ACCIDENTS BY TYPE:	
Head On	0
Angle	0
Rear End	0
Side Swipe	2
Single Veh	19
Other	1

NUMBER OF ACCIDENTS BY SEVERITY	
Prop. Dam.	14
Injury	7
Fatal	1

NUMBER OF ACCIDENTS WEATHER CONDITIONS	
Clear	13
Cloudy	7
Rain	0
Snow	2
Fog	0

NUMBER OF ACCIDENTS ROAD CONDITIONS:	
Dry	16
Wet	0
Slush	0
Snow	2
Icy	4

NUMBER OF ACCIDENTS LIGHT CONDITIONS	
Day	9
Night	13

ACCIDENT RATE IN NUMBER/MILLION VEHICLE MILES: 0.57

ACCIDENT SUMMARY

S FRONTAGE ROAD, 1.3 MILES E & W

SECTION LENGTH: 2.6 MILES

AVERAGE ANNUAL DAILY TRAFFIC: 2975

NUMBER OF ACCIDENTS BY YEAR.	
1986	2
1987	2
1988	2
1989	2

NUMBER OF ACCIDENTS BY TYPE:	
Head On	1
Angle	2
Rear End	0
Side Swipe	0
Single Veh	4
Other	1

NUMBER OF ACCIDENTS BY SEVERITY.	
Prop. Dam	4
Injury	4
Fatal	0

NUMBER OF ACCIDENTS WEATHER CONDITIONS.	
Clear	3
Cloudy	4
Rain	0
Snow	1
Fog	0

NUMBER OF ACCIDENTS ROAD CONDITIONS.	
Dry	5
Wet	1
Slush	0
Snow	1
Icy	1

NUMBER OF ACCIDENTS LIGHT CONDITIONS	
Day	6
Night	2

ACCIDENT RATE IN NUMBER/MILLION VEHICLE MILES 0.51

ACCIDENT SUMMARY

SHILOH RD, S FRONTAGE RD TO KING AVE

SECTION LENGTH: 2.5 MILES

AVERAGE ANNUAL DAILY TRAFFIC: 2700

NUMBER OF ACCIDENTS BY YEAR.	
1986	6
1987	6
1988	9
1989	5

NUMBER OF ACCIDENTS BY TYPE:	
Head On	0
Angle	9
Rear End	2
Side Swipe	3
Single Veh	10
Other	0

NUMBER OF ACCIDENTS BY SEVERITY.	
Prop. Dam.	10
Injury	14
Fatal	0

NUMBER OF ACCIDENTS WEATHER CONDITIONS:	
Clear	16
Cloudy	2
Rain	1
Snow	5
Fog	0

NUMBER OF ACCIDENTS ROAD CONDITIONS:	
Dry	13
Wet	3
Slush	3
Snow	0
Icy	5

NUMBER OF ACCIDENTS LIGHT CONDITIONS:	
Day	21
Night	3

ACCIDENT RATE IN NUMBER/MILLION VEHICLE MILES: 2.44

ACCIDENT SUMMARY

NEIBAUER ROAD, WEST OF SHILOH

SECTION LENGTH: 0.4 MILES

AVERAGE ANNUAL DAILY TRAFFIC: 1500

NUMBER OF ACCIDENTS BY YEAR.	
1986	NA
1987	3
1988	1
1989	2

NUMBER OF ACCIDENTS BY TYPE.	
Head On	0
Angle	0
Rear End	0
Side Swipe	0
Single Veh	6
Other	0

NUMBER OF ACCIDENTS BY SEVERITY	
Prop. Dam.	1
Injury	5
Fatal	0

NUMBER OF ACCIDENTS WEATHER CONDITIONS	
Clear	3
Cloudy	0
Rain	0
Snow	0
Fog	3

NUMBER OF ACCIDENTS ROAD CONDITIONS:	
Dry	4
Wet	0
Slush	0
Snow	0
Icy	2

NUMBER OF ACCIDENTS LIGHT CONDITIONS.	
Day	2
Night	4

ACCIDENT RATE IN NUMBER/MILLION VEHICLE MILES. 9.13

are under consideration by the Department of Transportation for funding through the Off-System Safety Program. Improvements are expected to be implemented in 1991.

Construction of the proposed interchange would impact accident experience on these roadways. Increased traffic volumes on Shiloh Road upon implementation of the interchange would cause the accident rate to increase slightly. The number of accidents would increase to approximately 14 accidents per year compared to a historical average of 6 per year. This projected increase would be due mainly to a 133% increase in traffic volumes. Other safety impacts are discussed in the Alternatives Chapter of this document.

G. SOCIAL DEMANDS & ECONOMIC DEVELOPMENT

By providing a direct connection from Interstate 90 to Shiloh Road, local access traffic would be served more efficiently by reducing travel times to areas on the west end of Billings. Improved travel time to I-90 from this area would not only serve commuter and commercial traffic, but would improve access for recreational opportunities. Most of the recreational destinations in the region lie to the west of Billings.

The proposed interchange would also provide improved travel conditions for farm to market traffic. Predominant movements of this type currently involve sugar beets and grain crops which are taken from west Billings to the sugar plant and grain handling facilities near 27th Street on the east side of Billings. Travel time would be reduced and safety would be improved if the proposed interchange were built. Heavy truck traffic of this type would be able to use Interstate 90 for the major portion of the farm to market trip as opposed to the local surface streets that they are now required to use.

ZooMontana, a new regional zoo facility, is being constructed north of the proposed interchange area adjacent to the west side of Shiloh Road. Construction of an interchange

in the vicinity of Shiloh Road would improve access to this community development project.

The proposed interchange would also improve access to Oscar's Dreamland, an existing museum complex located just west of Wise Lane and approximately 1½ miles south of the project area.

Proposed development of commercial and industrial property just west of 24th Street West and on both sides of King Avenue is presently in a concept development stage. The property would provide retail shopping, offices and light industrial buildings on a 200 acre parcel of land. A baseline traffic analysis of the proposed development indicates that the completed project would generate in excess of 60,000 vehicular trips per day.[3] While not all of these trips would translate into new vehicular traffic on the street system, substantial increases on King Avenue West would be expected. Alternative access to this area via the proposed Shiloh Road interchange would be a major factor in development of future street system improvements and commercial development scheduling.

H. INTERMODAL RELATIONSHIPS

Logan International Airport is located at the north edge of the City of Billings approximately six miles northeast of the project vicinity. The Shiloh Road Interchange project would provide improved access to Logan International Airport for I-90 travelers from the west. Airport traffic would be able to bypass congested city streets by using Shiloh Road, Rimrock Road, Zimmerman Trail and Highway 3 between I-90 and Logan Field.

3 Engineering Inc., February 1991, Traffic Accessibility and Impact Evaluation of Midland Properties.

Construction of the proposed interchange would provide improved truck access to large industrial tracts in the western portion of Billings. This would become more critical as existing undeveloped tracts are improved in the future. The interchange would also serve future truck bypass routes when the Inner Belt Loop is completed.

Montana Rail Link tracks are located on the north side of I-90, adjacent to large tracts of undeveloped land and vacant land with industrial zoning. Numerous spur track location options are currently available. The proposed interchange would improve intermodal access if these industrial tracts develop in the future.

CHAPTER 2 - ALTERNATIVES

INTRODUCTION

This section of the document describes the development of alternatives based on projected traffic volumes, geometric controls and fulfillment of the purpose and need for the proposed interchange. It also discusses evaluations made during the alternative analysis process leading up to the selection of the preferred alternative.

Reasonable construction alternatives presented herein are a culmination of extensive preliminary design efforts undertaken to insure that the proposed alternatives would meet current design standards and would operate efficiently. A primary consideration in the preliminary design analysis were traffic volume projections for each of the alternatives considered.

PROJECTED TRAFFIC VOLUMES

The Purpose and Need Chapter of this document presents the historical traffic volumes and traffic characteristics of the area road and street system. Traffic projection differentials between the "Build" and "No-Build" alternatives, developed through the transportation planning process are also defined in that section. Those volumes represent the average or first level of analysis, establishing the basis of need for the proposed interchange. The second level of analysis, presented in this section, involves design traffic volumes for the construction alternatives. In this case, location of the interchange has a direct bearing on the traffic demand that would be realized. Figure 2-1 illustrates the locations of the build alternatives considered for this project The following observations regarding the traffic volume projections were made by the Department of Transportation's, Urban Planning Section in submission of this data:

1. The further east the interchange is located, the greater the total ramp volumes.

2. The further east the interchange is located, the greater the volumes carried on the westbound on-ramp and the eastbound off-ramp. With one exception (Alternative D westbound off-ramp), the two aforementioned ramps show the largest relative volume increases as the interchange is moved to the east.

3. Alternative A appears to provide the least access to the western study area, indicating long travel times through the western study area to the interchange.

4. The lower volumes on the overpasses in Alternatives A, B, and D are primarily due to the presence of the existing Shiloh Road overpass providing an alternate access into the western portion of the study area.

Figures 2-2 through 2-5 illustrate the projected traffic volumes for each of the "Build" alternatives for both 1993 (implementation year) and 2013 (design year). The observations regarding differences in traffic projections are important with regard to the purpose and need of the interchange since the interchange must serve as many trips as practical to be beneficial to the greatest number of motorists. The interchange must also provide alternate access to existing streets which would be congested in the future. In achieving these needs, the construction alternatives would impact the streets that are directly connected to the interchange crossroad. Location of the interchange would therefore, have trade-offs that are discussed further in this chapter of the document.

Table 2-1 is a summary of projected traffic volumes for the construction alternatives. The "No-Build" alternative traffic projections were presented in the Purpose and Need Chapter and are here again presented for comparison. These volumes along with those

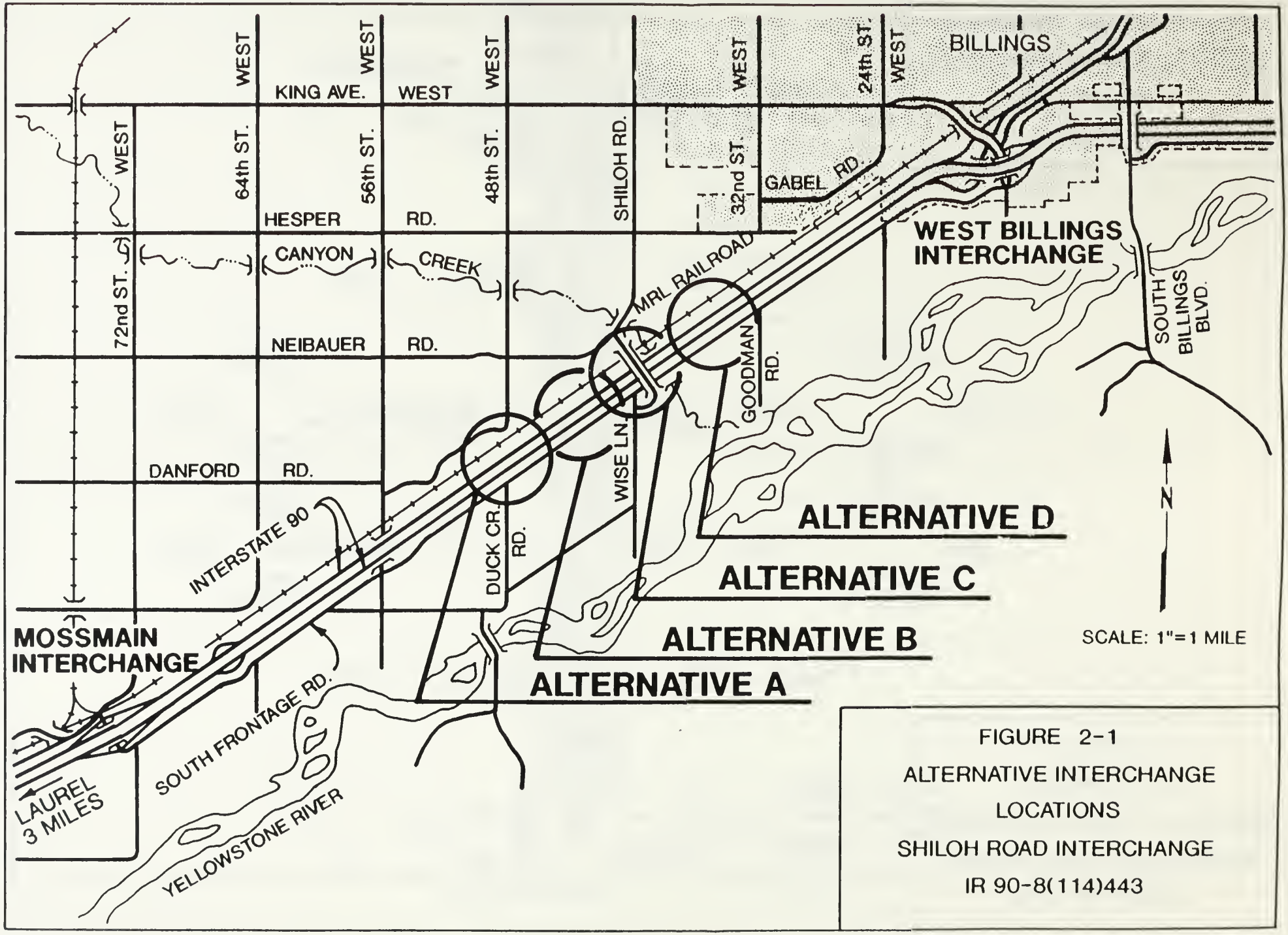


FIGURE 2-1

ALTERNATIVE INTERCHANGE

LOCATIONS

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

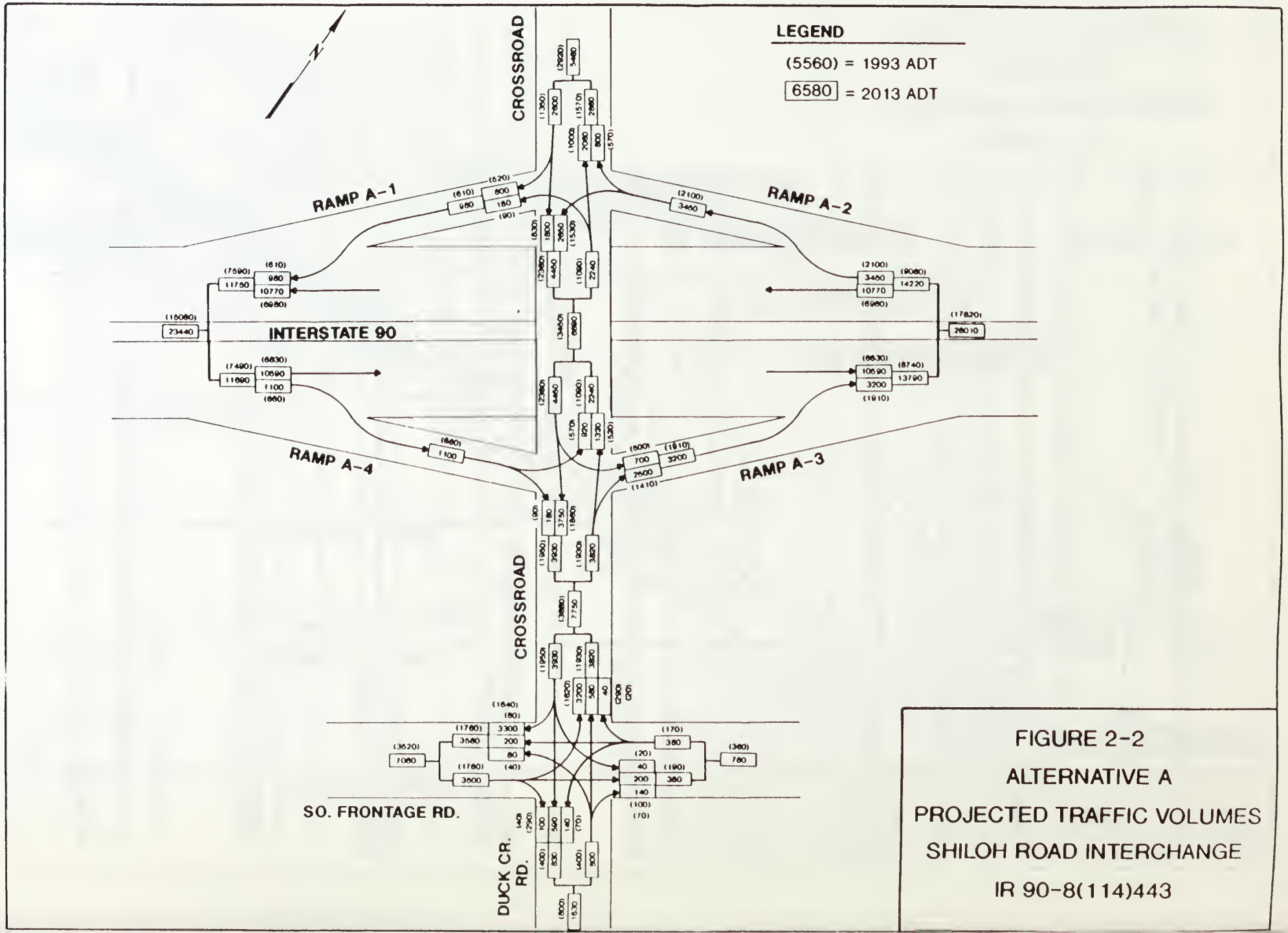


FIGURE 2-2
ALTERNATIVE A
PROJECTED TRAFFIC VOLUMES
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

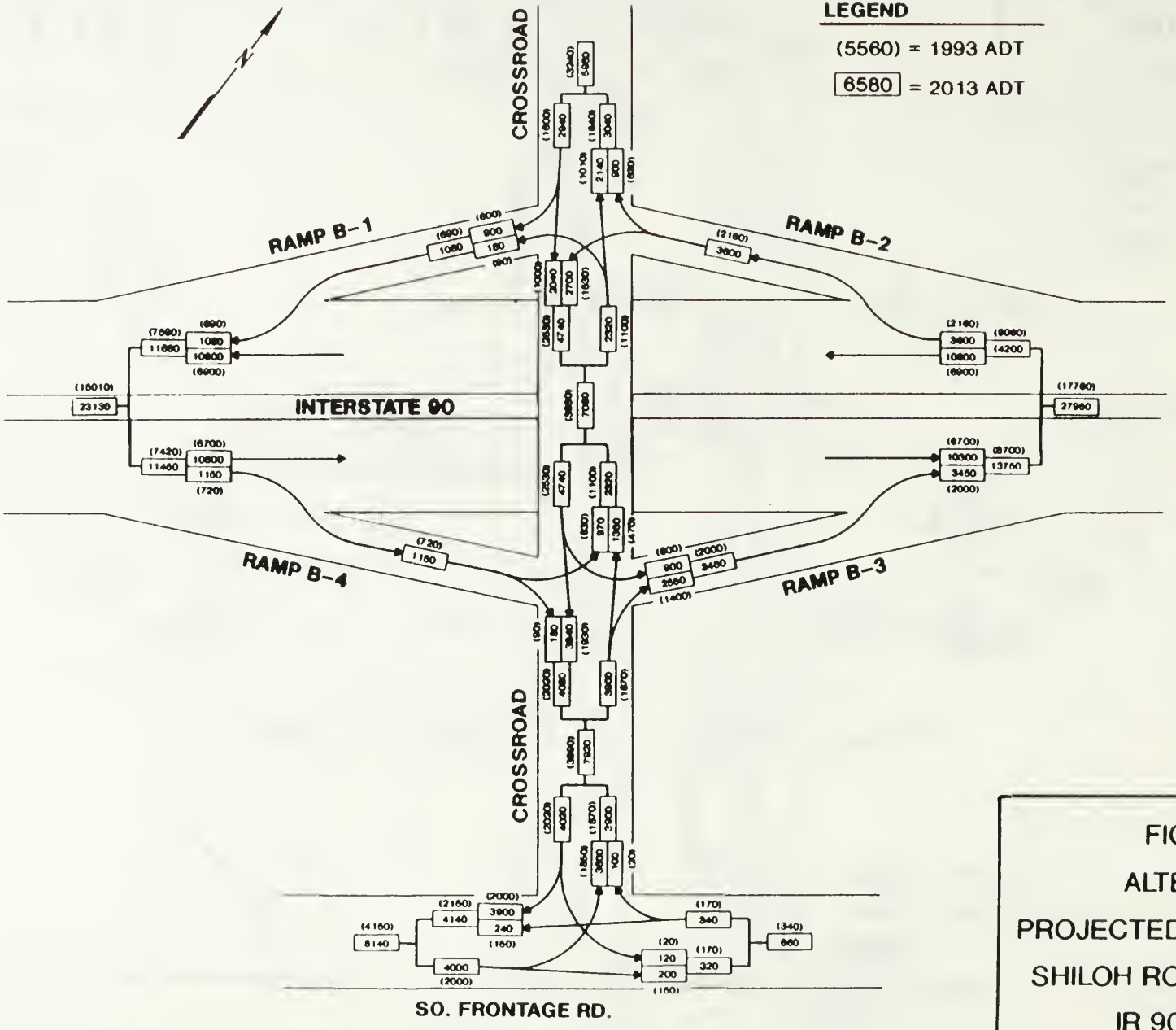


FIGURE 2-3

ALTERNATIVE B

PROJECTED TRAFFIC VOLUMES

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

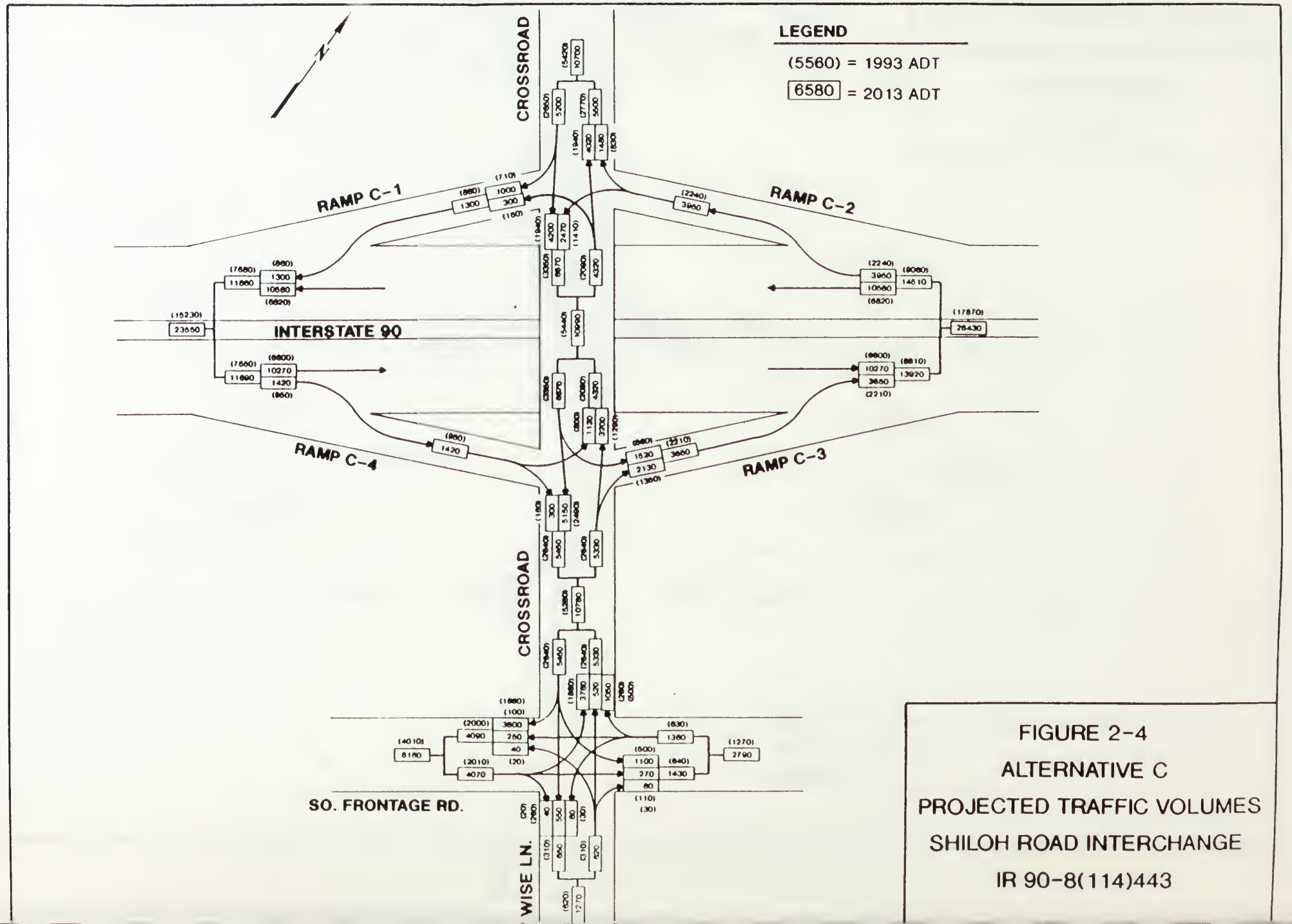


FIGURE 2-4
ALTERNATIVE C
PROJECTED TRAFFIC VOLUMES
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

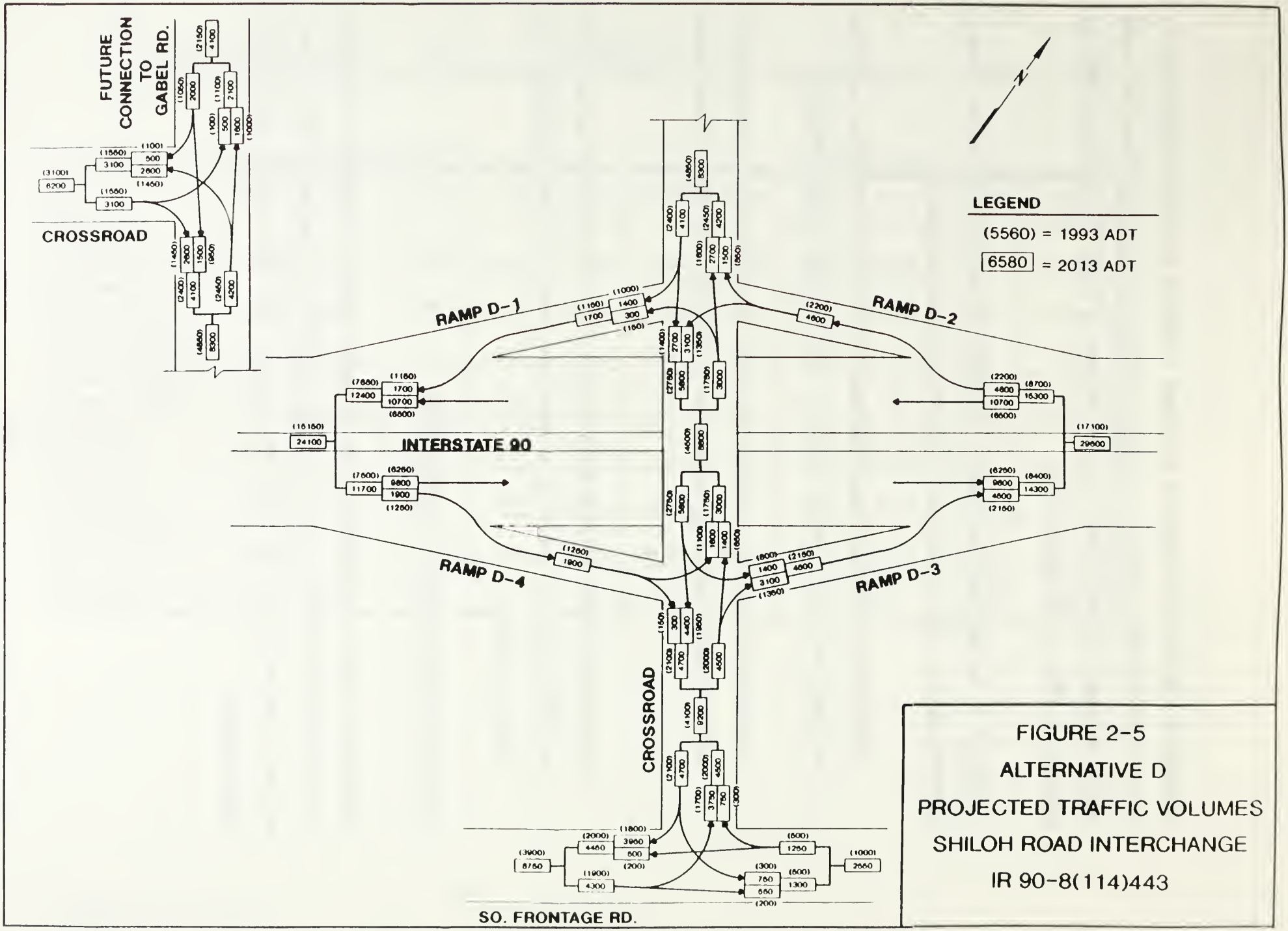


FIGURE 2-5

ALTERNATIVE D

PROJECTED TRAFFIC VOLUMES

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

presented in Figures 2-2 through 2-5 were used to develop preliminary designs and to assess system operating conditions. Projected volumes for a future addition that would connect Alternative D with Gabel Road are included in Table 2-1 for the year 2013 to illustrate the effect of this improvement.

In addition to the observations made by the MDT Urban Planning Section, further inferences can be made from the traffic volumes presented in Table 2-1:

The further east the interchange is located, the less traffic demand there would be on King Avenue West which is projected to have future capacity problems.

Alternatives C and D would load more traffic onto Shiloh Road than any of the other alternatives, indicating that those two interchange locations would serve more trips.

The addition of a future Gabel Road connection would significantly reduce traffic on Shiloh Road by providing an alternative route for both north-south and east-west traffic.

ALTERNATIVES INITIALLY CONSIDERED

Alternatives initially considered for the proposed project include the "No-Build" alternative, the Transportation System Management (TSM) alternative, the Mass Transit alternative, and several "Build" alternatives including alternative locations and proposed design options.

TABLE 2-1

SUMMARY OF ANNUAL AVERAGE DAILY TRAFFIC (AADT) PROJECTIONS - ALTERNATIVES

	YEAR 1993					YEAR 2013					
	No-Build	Alt "A"	Alt "B"	Alt "C"	Alt "D"	No-Build	Alt "A"	Alt "B"	Alt "C"	Alt "D"	Future Gabel Conn.
Interstate 90 West of Interchange	15,200	15,080	15,010	15,230	15,150	23,600	23,440	23,130	12,550	24,100	24,100
Interstate 90 East of Interchange	15,200	17,820	17,760	17,870	17,100	23,600	28,010	27,950	28,430	29,600	29,600
I-90 S. Frontage Rd. West of Interchange	3,400	3,520	4,150	4,010	3,900	8,100	7,080	8,140	8,160	8,750	8,750
I-90 S. Frontage Rd. East of Interchange	2,900	360	340	1,270	1,000	7,400	760	660	2,790	2,550	2,550
Shiloh Road I-90 Overpass	2,150	900	600	5,440	1,600	5,800	1,400	800	10,990	2,000	2,000
Shiloh Road North of Neibauer	2,700	3,420	3,740	5,920	5,700	6,200	6,960	7,480	11,600	11,100	6,100
King Avenue West East of S. 24th St. W.	17,400	16,700	16,500	14,300	13,900	44,000	43,300	42,800	38,000	37,300	37,300
Gabel Road Design Alternative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4,100

A. "NO-BUILD" ALTERNATIVE

The "No-Build" alternative implies only limited activities beyond the continued routine maintenance of the existing facilities. In the case of this proposed project, existing facilities include the existing Shiloh Road Overpass, Interstate 90, King Avenue West, West Billings Interchange, and connecting roadways. This alternative includes safety and maintenance improvements. It does not preclude actions on other transportation facilities in the vicinity which are either being designed or planned for future construction.

B. TRANSPORTATION SYSTEM MANAGEMENT (TSM) ALTERNATIVES

TSM alternatives include activities which maximize the safety and efficiency of the present transportation system. TSM projects typically provide quick and economical improvements to existing roads and streets through the use of traffic control devices and/or minor physical changes. Deficiencies identified on the existing road system relate to future capacity problems on the Shiloh Road Overpass, on the South Frontage Road, and on King Avenue West.

By their nature, TSM projects are implemented on a reactionary basis to mitigate existing or imminent problems. In this case, TSM projects could be applied at a future date. TSM projects could involve the following actions:

Providing left turn bays at major intersections to improve capacity and safety.

Consolidating or eliminating low volume approaches that create friction for through traffic flows.

Making grade adjustments and clearing obstructions to improve passing sight distance.

Widening paved shoulders to improve maneuverability and improve capacity.

Modify pavement markings and signing to provide additional traffic lanes.

(See additional discussion in the Alternatives Eliminated From Consideration Section of this document).

C. MASS TRANSIT ALTERNATIVE

The City of Billings currently has a bus system known as MET that operates an extensive system of routes. None of the existing routes extend to the proposed project area, but some portions of west Billings are served by MET. Commercial carriers also provide interstate and intrastate travel through the project area, but do not serve the project travel demands. Considering the location and travel characteristics in the project location, mass transit could only play a minor role as a future alternative.

(See additional discussion in the Alternatives Eliminated From Consideration Section of this document).

D. BUILD ALTERNATIVES

The 1990 Billings Urban Transportation Plan has defined the general location of the "Build" alternatives being considered. This plan, along with perceived needs of the local governments, has identified the vicinity of the existing Shiloh Road overpass as the most desirable location for the proposed interchange. The primary basis for this location is the ability to connect to Shiloh Road, a major north-south arterial. Figure 2-1 shows the locations of the "Build" alternatives in relation to the existing Mossmain and West Billings Interchanges.

An Interstate 90 overpass on Shiloh Road led to development of the original "Build" alternative at this location utilizing the existing overpass structure. The location of this alternative, designated as Alternative C, is shown in Figure 2-6.

In order to investigate benefits associated with alternative interchange locations and because of the complexities associated with construction of an interchange at the Alternative C location, two other build locations were added for consideration:

> Alternative A would be located approximately one mile west of the Alternative C location. An interchange at the Alternative A location would connect 48th Street West, a rural north-south arterial north of I-90, with Duck Creek Road south of I-90.
>
> Alternative B was developed as a compromise location between Alternatives A and C and would be located approximately midway between those interchange locations. The locations and configurations of Alternatives A and B are illustrated in Figures 2-7 and 2-8.

During a public meeting held as part of the project scoping process, an additional alternative location was presented for consideration by a member of the public. It was suggested that a location east of the existing Shiloh Road overpass be considered. As a result of this input, Alternative D has been developed for evaluation. The configuration of Alternative D is shown in Figure 2-9.

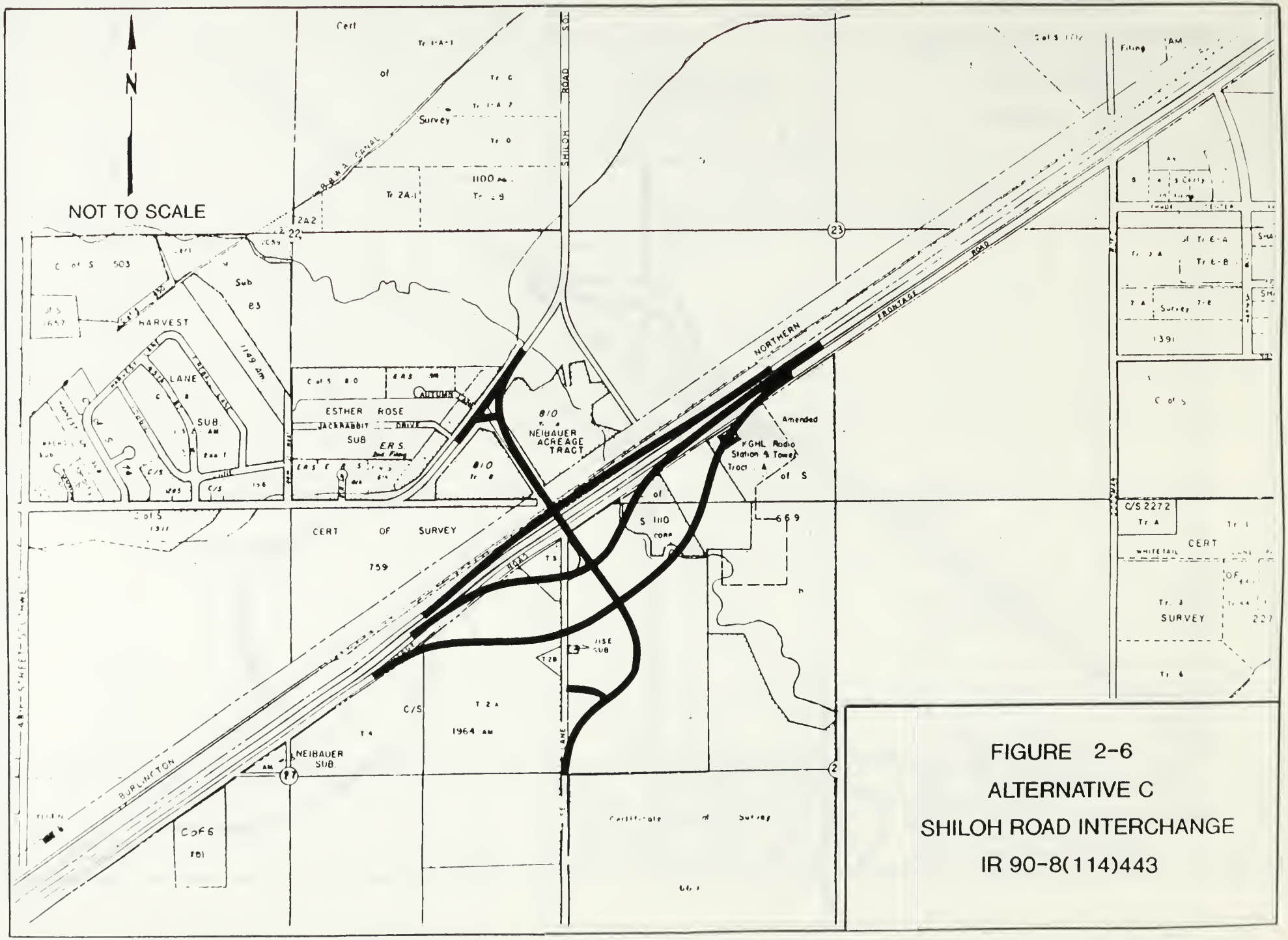


FIGURE 2-6

ALTERNATIVE C

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

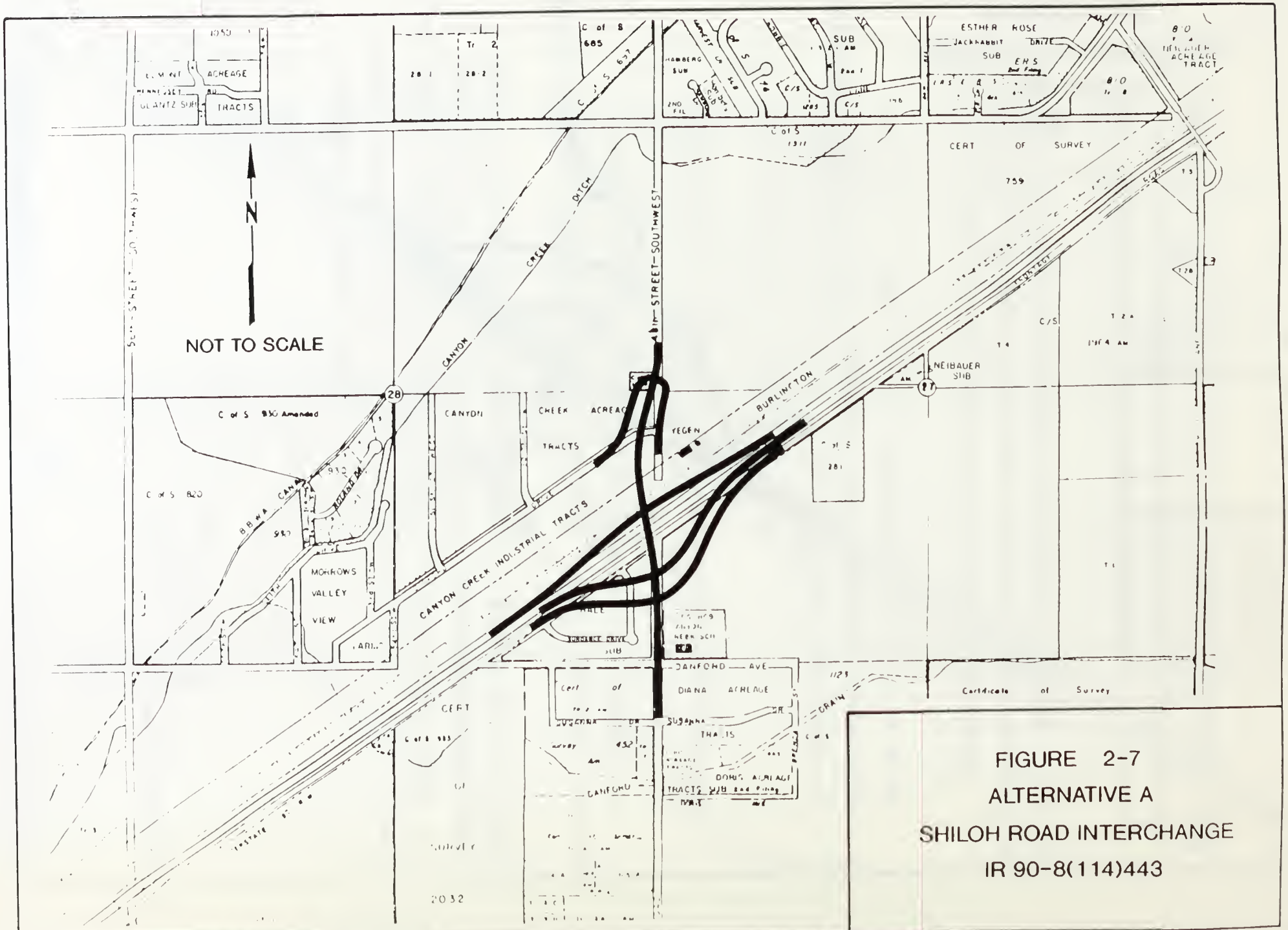


FIGURE 2-7

ALTERNATIVE A

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

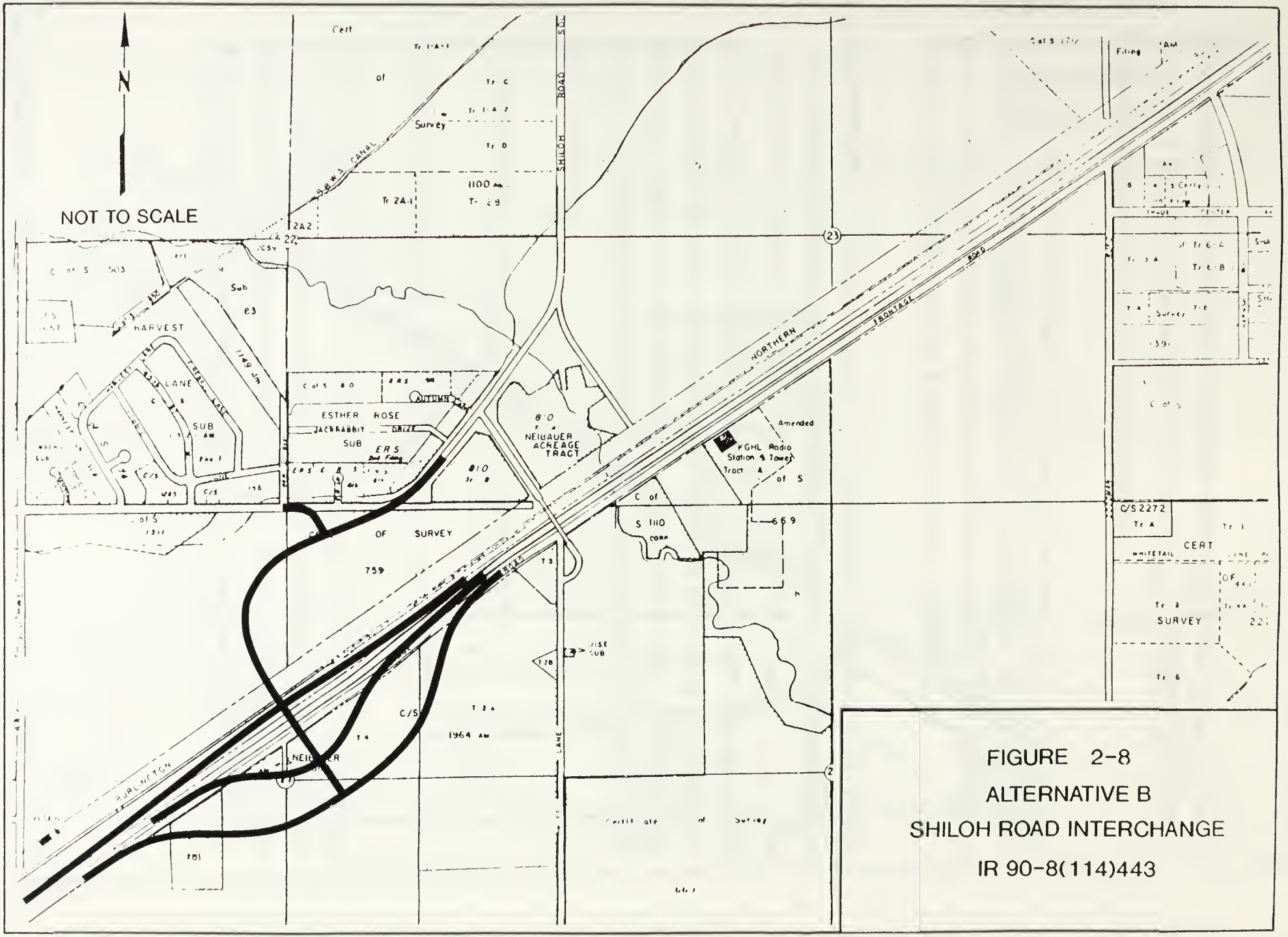


FIGURE 2-8
ALTERNATIVE B
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

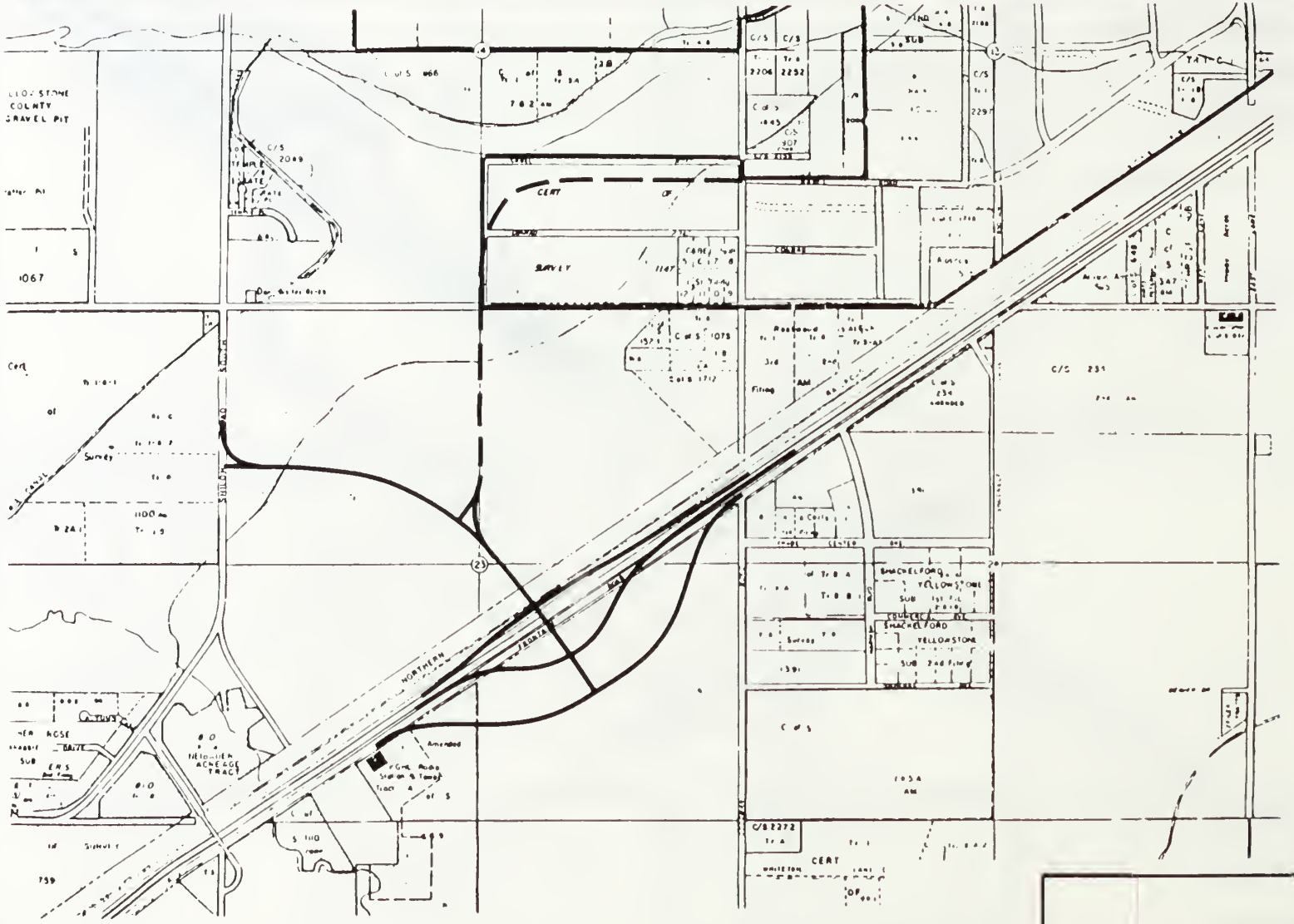


FIGURE 2-9

ALTERNATIVE D

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

Design features of the proposed interchange alternatives evolved through extensive preliminary engineering analysis. This process has resulted in alternative design options for interchanges at the Alternative C and D locations.

A design option at the Alternative C location involves maintaining a diamond ramp configuration while modifying the frontage road alignment to lessen right-of-way impacts. Also, an option for connecting the crossroad to Neibauer Road has been developed. A schematic of the design option for Alternative C is shown in Figure 2-10.

The Alternative D location lends itself to several possible connections to the existing urban transportation system north of the interstate. The 1990 Transportation Plan has identified the extension of Gabel Road as an important future project which would provide an additional link between the proposed project and the inner belt loop at 32nd Street as well as alternative access to the large commercial area at King Avenue and 24th Street West. Because of this future project, a preliminary routing was developed to illustrate the connecting roadways north of the interstate. This future development is shown in Figure 2-11.

ALTERNATIVES ELIMINATED FROM CONSIDERATION

A. TSM ALTERNATIVES

TSM alternatives are especially suitable for solving existing capacity and safety problems. Since existing deficiencies are associated with the transportation system rather than existing roadways, TSM improvements could only be implemented when area roadways develop capacity or safety problems in the future. At that time, roadway deficiencies on

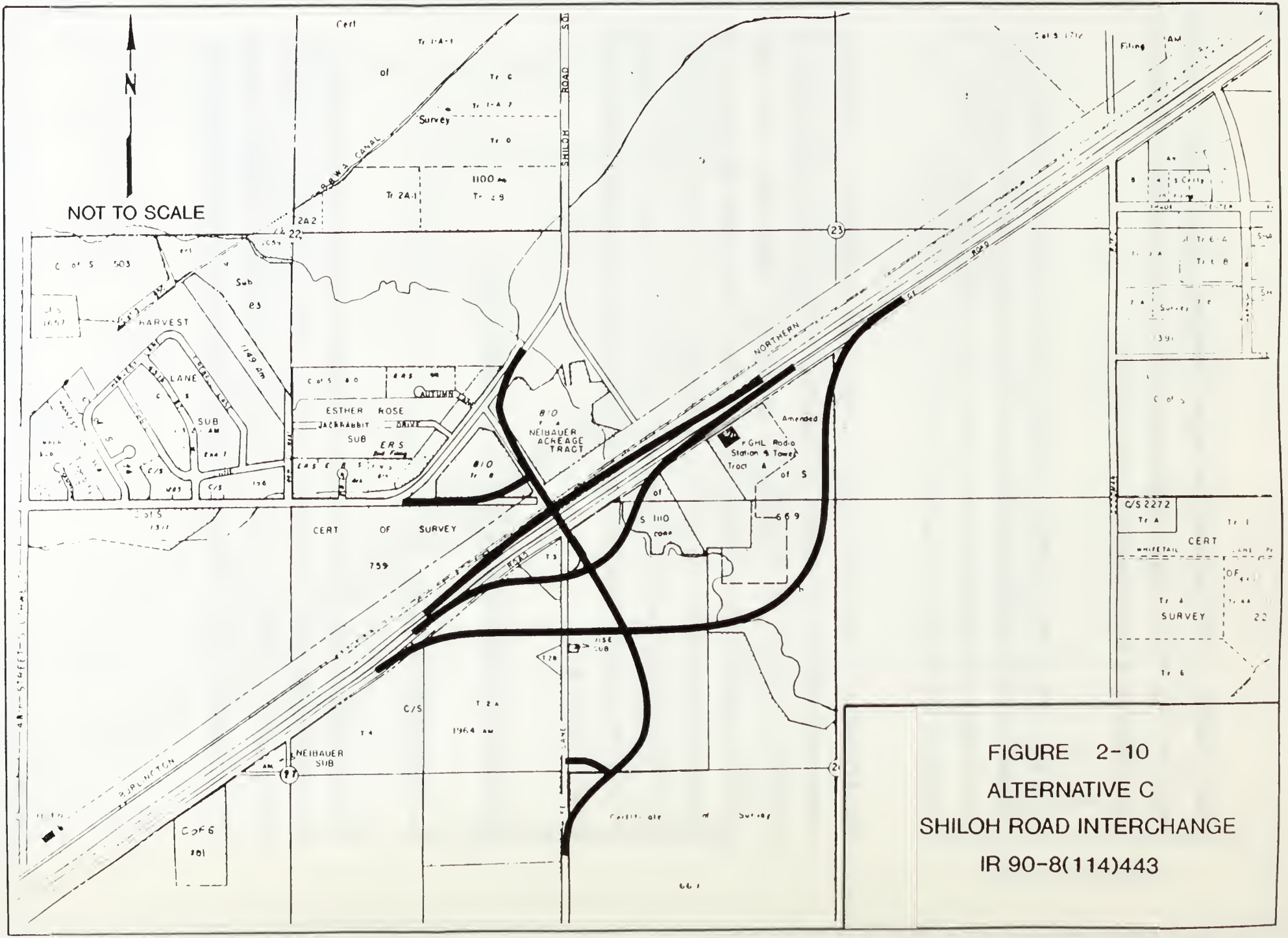


FIGURE 2-10

ALTERNATIVE C

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

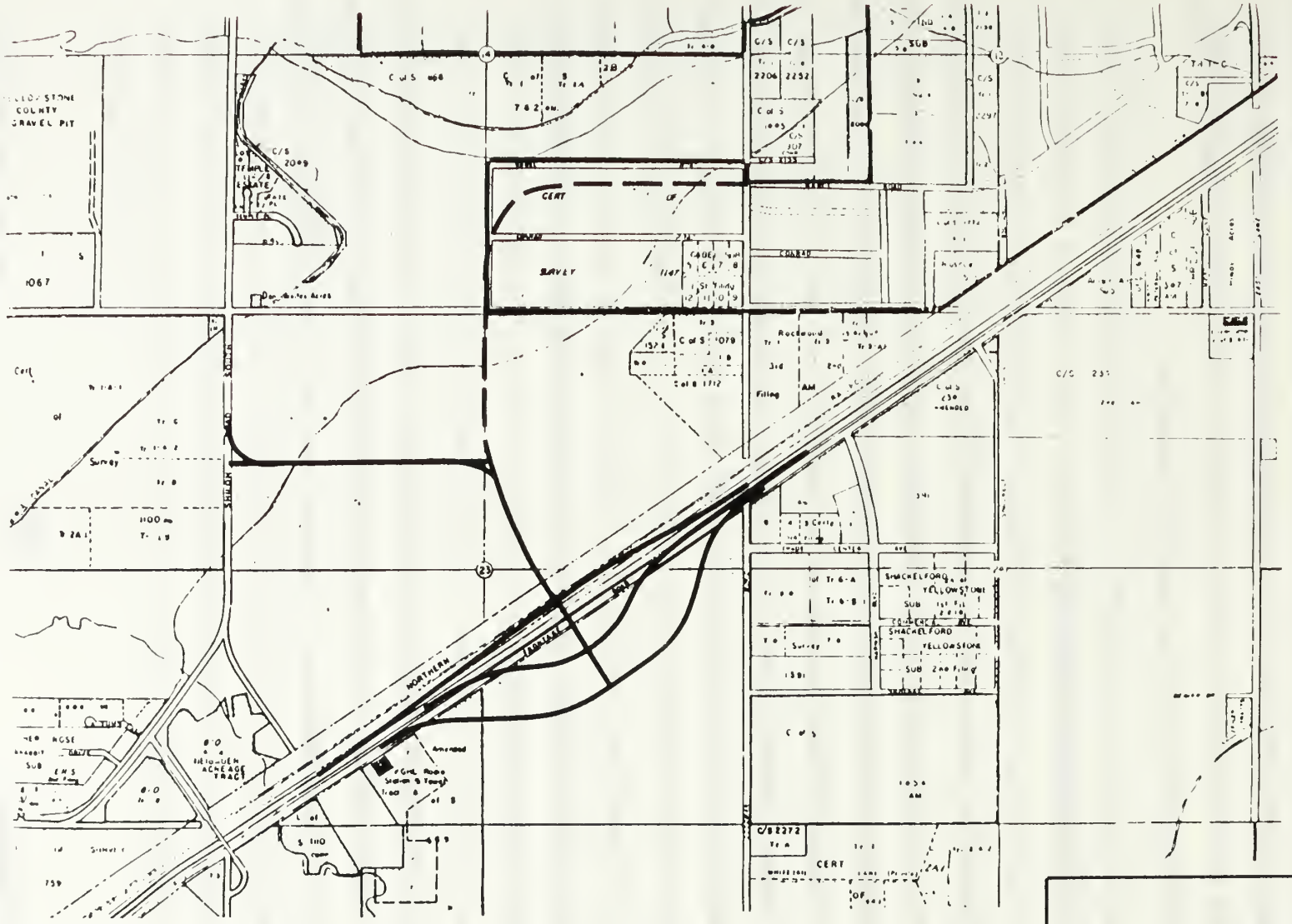


FIGURE 2-11
ALTERNATIVE D
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

Shiloh Road and South Frontage Road would require complete reconstruction. Capacity of the proposed seven lane section on King Avenue West could not be improved by TSM measures.

Therefore, TSM alternatives would not provide sufficient improvements to mitigate problems associated with system deficiencies in this portion of the urban area. A primary need of the proposed project is reduced travel times to the western portion of Billings. This objective cannot be achieved using TSM strategies.

B. MASS TRANSIT ALTERNATIVE

The Billings Metropolitan Transit system (MET) is the only public or commercial transportation facility capable of providing service to the area of Billings related to the proposed project. However, MET routes operate on the fringe of the area to be serviced by the proposed interchange and do not include any routes which utilize Interstate 90. At some future date when the area reaches higher urban densities, it is possible that MET will operate scheduled routes north and south of I-90 in this area. However, the proposed interchange would be needed to economically justify a route extension. Even then, MET would capture significantly less than 5% of the total trips as has been experienced in other major portions of Billings. Mass transit could not be considered a viable alternative to the project needs in this case.

Commercial transportation carriers currently utilize I-90. Terminal points are in the Billings downtown district. Unless major terminals were located in the western portion of Billings, passenger movements on these carriers would have very little relevance to the project needs.

C. LOCATION ALTERNATIVES

Alternative A was presented at the initial scoping meeting and was vigorously opposed by several local groups including the Canyon Creek School Board, Canyon Creek PTO and a group of residential homeowners. The concerns of the groups included safety of school children, traffic safety, limitations on expansion plans of the school, noise impacts and effects on property values.

The traffic projections presented in Table 2-1 indicate that demand for an interchange at the Alternative A location would be insufficient to justify construction of a new facility within the project planning period. It would not adequately address the project needs since travel time reductions would be minimal and reduced volumes on King Avenue West would be insignificant. The combination of vigorous opposition to an interchange at this location combined with the lack of projected demand has led to a determination that an interchange at the Alternative A location is not a reasonable alternative. Therefore, Alternative A has been eliminated from further consideration.

D. DESIGN OPTIONS

The initial design concept at the Alternative C location (Figure 2-6) would locate the frontage road realignment as close as possible to its existing location while providing for the required design speed and geometric design standards. This design concept would have high right-of-way impacts and relocation costs compared to the other alternatives due to its impact on two existing businesses, a nursery and a radio station. This design concept would also require a channel change of Canyon Creek and would result in wetlands impacts. In addition to impacts associated with the frontage road relocation, a shorter connection to Neibauer Road would not be desirable from the standpoint of traffic safety because it would create an intersection within a relatively sharp curve on the crossroad alignment.

The design options considered reasonable at the Alternative C location (Figure 2-10) would reduce the right-of-way impacts through a frontage road realignment and would provide a more desirable connection for Neibauer Road. Development of the design options would overcome right-of-way impacts and traffic safety concerns related to the initial design concepts. Therefore, initial design concepts at the Alternative C location are not considered reasonable and have been eliminated from further consideration.

The preliminary routing for the future Gabel Road connection developed at the Alternative D location (Figure 2-11) would be very similar to the initial design concept (Figure 2-9). The difference between the two designs would be associated with the intersection with the planned Gabel Road extension. The initial design concept included an intersection that would favor traffic flow in an east-west direction towards Shiloh Road. The preliminary routing would modify the intersection to provide uninterrupted traffic flow in a north-south direction, toward a future connection with Gabel Road. Gabel Road currently exists only as far west as 32nd Street West. The extension of Gabel Road to the Alternative D location (approximately ½ mile west and ½ mile south) has been determined to be ineligible for federal funding participation associated with the interchange construction. Traffic projections developed for this location indicate that the main flow of traffic through this intersection, both upon initial completion of the project and in the design year, would be higher for the east-west direction because that leg of the intersection would also accommodate Neibauer Road and Shiloh Road traffic. Due to funding considerations and the fact that demand would be higher on the east-west leg, the preliminary routing developed for Alternative D (Figure 2-11) is not considered reasonable within the framework of this project and has been eliminated from further consideration. However, future construction of the Gabel Road extension and its intersection with the crossroad connection will be considered in the design of the crossroad. The local governments would be required to make the connection when they deem it necessary.

ALTERNATIVES

A. BUILD ALTERNATIVES

Reasonable "Build" alternatives for the proposed interchange have been determined to be Alternatives B, C and D. The interchange geometrics and design features for each of the build alternatives have been developed based on individual traffic volume projections.

B. DESIGN FEATURES COMMON TO ALL BUILD ALTERNATIVES

There are several design features that are common to interchange Alternatives B, C and D. In order to avoid repetition, these common features are discussed below.

South Frontage Road

The frontage road design features are essentially identical for Alternatives B and D. The alignment of the South Frontage Road would provide for a 60 mph design speed utilizing a maximum horizontal degree of curvature of D = 4° 45' with a superelevation rate of e = 0.08 ft/ft. The frontage road would intersect the crossroad at 90°. Through this intersection area the frontage road would be on a horizontal curvature of D = 0° 45' with e = 0.02 ft/ft. The 0° 45' curve through the intersection would compound with a 4° 45' curve (utilizing a 241 ft. spiral segment). The final curve, tying back to the existing frontage road alignment, would again be a 4° 45' curve with 250 ft. spirals and e = 0.08 ft/ft.

The typical frontage road roadway width would be 40 ft. (12 ft. lanes, 8 ft. shoulders). The frontage road/crossroad intersection would include a left turn lane for east bound frontage road traffic turning northbound onto the crossroad and a right turn lane for southbound crossroad traffic turning west onto the frontage road. The typical section

would be transitioned into a wider section at the intersection to allow operation of the auxiliary turn lanes.

I-90 Ramps

All interchange alternatives would have ramps in a diamond-type configuration. These ramps would provide a 70 mph design speed for traffic entering and exiting I-90. The eastbound on-ramp for Alternatives C and D would include a 900 ft. parallel acceleration lane ending with a 600 ft. taper. All ramps would be one-lane with a total width of 24 ft. (14 ft. lane, 6 ft. and 4 ft. shoulders).

Crossroad

The required crossroad width has been determined to be 60 ft. (2-12 ft. lanes, 20 ft. median, 2-8 ft. shoulders). The structure width would be somewhat wider to accommodate the roadway width and bridge guardrail. The median would provide for left turn movements at the ramp terminal intersections. Minimum required ramp terminal separation has been determined to be 600 ft. based on required distances for tapers and left turn bays. Similarly the required separation between the south ramp terminals and the frontage road has been determined to be 400 ft. The proposed crossroad and ramp typical roadway sections are shown on Figure 2-12. The crossroad would be transitioned to a two-lane typical roadway connecting to the existing Shiloh Road section.

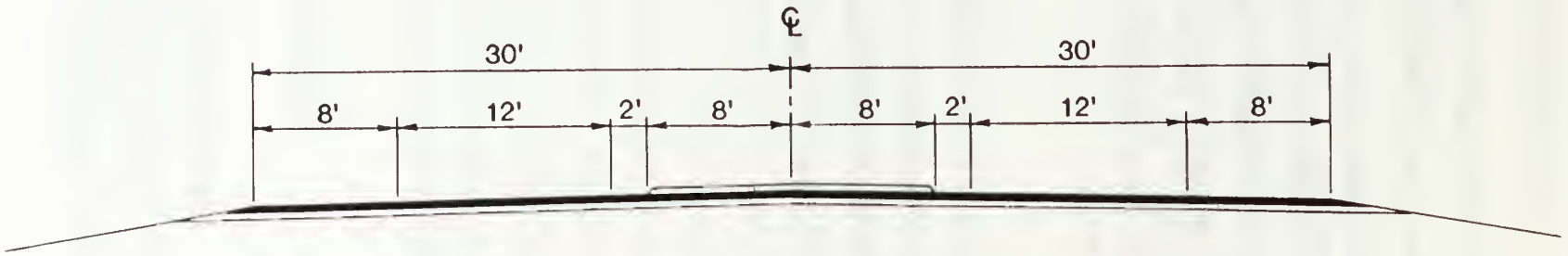
Access Control

Each build alternative would be a controlled access facility. Approaches would be prohibited to Interstate 90, the I-90 ramps and to the crossroad from its connection with the South Frontage Road to approximately 300 ft. beyond the north ramp intersection.

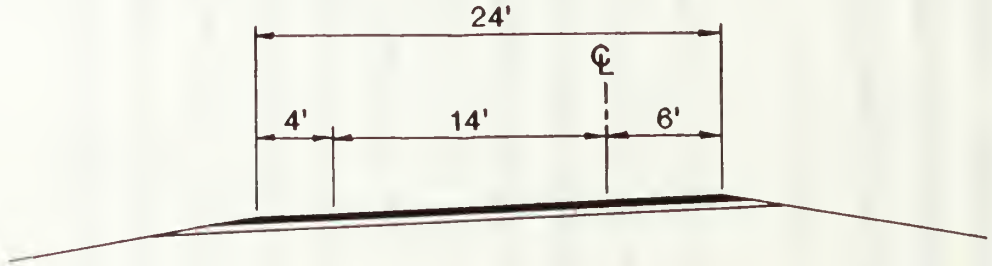
C. ALTERNATIVE B

The configuration of Alternative B is shown in Figure 2-13. The general location of Alternative B was selected as a compromise alternative between Alternative A at Duck Creek Road/48th Street West and Alternative C at the existing Shiloh Road overpass. The exact location of Alternative B was determined by the distance that would be required to provide an acceptable connection on the north to Neibauer Road. A connection to Wise Lane on the south would not be an implementation feature of this alternative. If future conditions warranted, a connection to Wise Lane from the frontage road/crossroad intersection could be made.

The crossroad design speed for this alternative has been established at 50 mph based on required traffic operations at the Shiloh Road/Neibauer Road intersection and the proximity of existing roadside development. Signalization of the intersections associated with this alternative would not be warranted within the design year planning time frame.



CROSSROAD TYPICAL



RAMP TYPICAL

FIGURE 2-12
TYPICAL SECTIONS
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

STATE	PROJECT NO.	SHEET
MONTANA	IR 90-8(114)443	

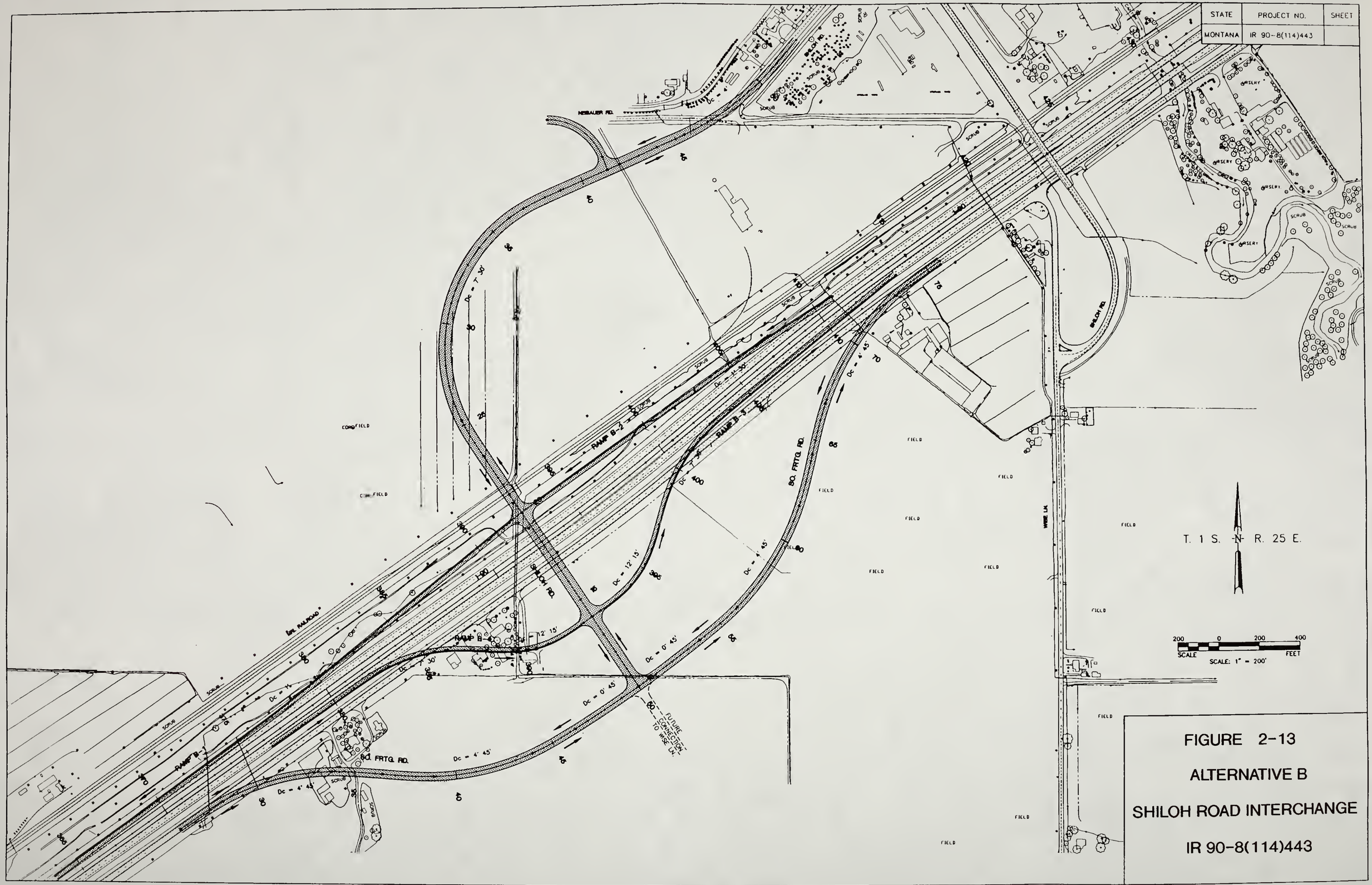


FIGURE 2-13

ALTERNATIVE B

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

D. ALTERNATIVE C

Alternative C is an interchange location which would utilize the existing Shiloh Road overpass. Figure 2-14 shows the proposed geometric configuration of Alternative C. This alternative would connect on the north to Shiloh Road and on the south to Wise Lane. The design speed of the crossroad has been established at 40 mph based on the existing horizontal and vertical geometry of Shiloh Road. A minimum of three new bridge structures over Canyon Creek would be required (frontage road, Ramp C-3, Ramp C-2). A connection to Neibauer Road would be constructed approximately mid-way between the north ramp terminal and the beginning of the 10° 30' curve.

The frontage road would be realigned to intersect the crossroad at approximately 68°. A 2° horizontal curve on the crossroad preceding the intersection would be added to achieve the 68° intersection. The frontage road would be relocated south of the radio station's towers and would be approximately 1700 ft. south of I-90 at its furthest point south. A 60 mph design speed was used to develop road geometry.

Signalization would be warranted at the ramp terminals and at the crossroad/frontage road intersection by design year volumes (Yr. 2013).

E. ALTERNATIVE D

A proposed interchange alternative in the general location of Alternative D was a suggestion that came out of the first scoping meeting for this project. The specific location of Alternative D was determined by geometric analysis of design features that would avoid impacts to the radio station facility and provide an adequate connection alignment to Shiloh Road.

STATE	PROJECT NO.	SHEET
MONTANA	IR 90-8(114)443	

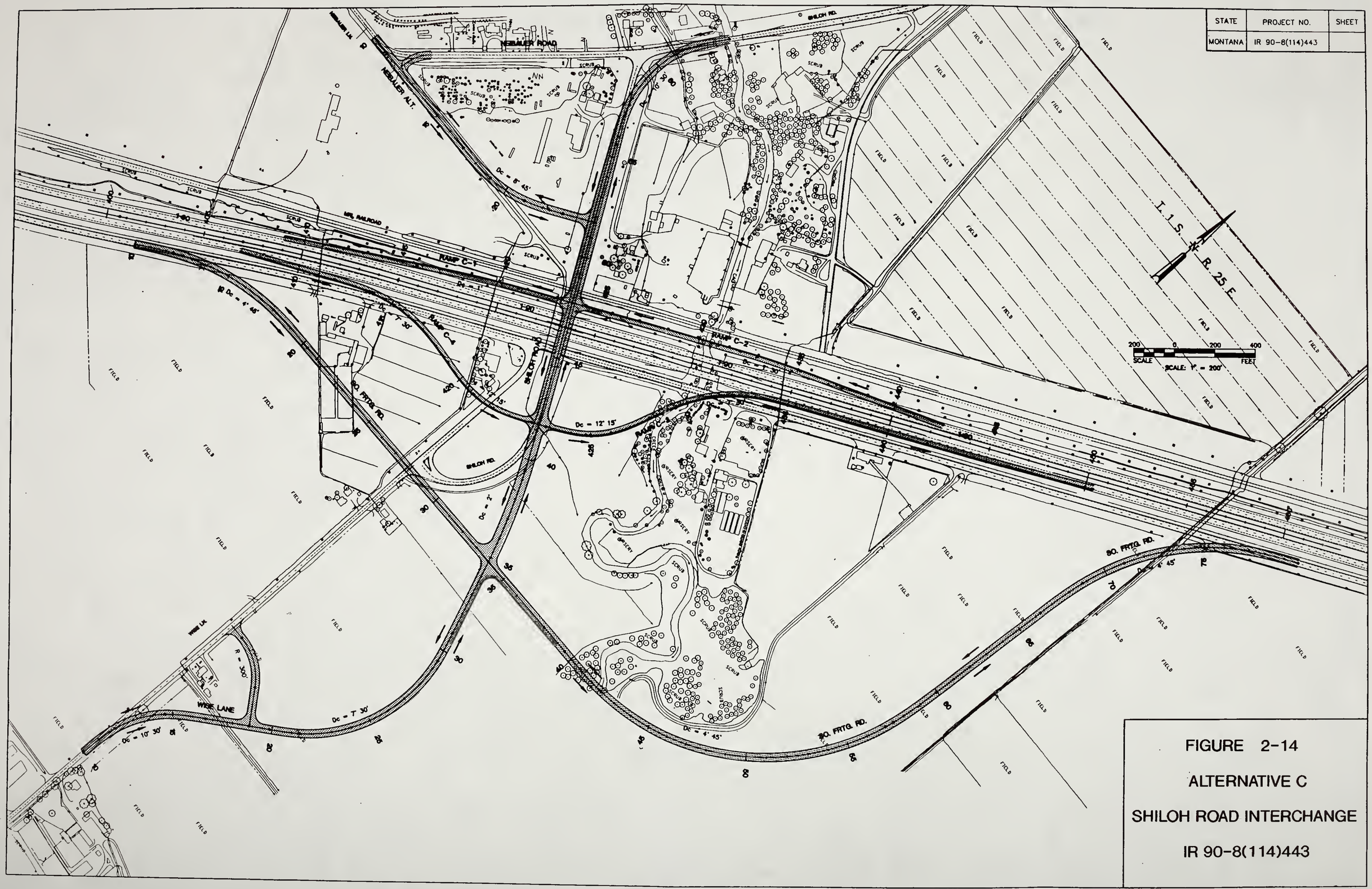


FIGURE 2-14

ALTERNATIVE C

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

Alternative D would not directly connect with any roadways south of I-90. The proposed connection to the urban system north of I-90 would be directed toward Shiloh Road as shown in Figure 2-15. Although a connection to Gabel Road would not be designed with the initial construction of the interchange, the design of that connection could be accommodated at a future time.

Signalization would be warranted by design year volumes (Yr. 2013) at the ramp terminals and at the crossroad/frontage road intersection.

F. "NO-BUILD" ALTERNATIVE

The "No-Build" alternative must always be considered a reasonable alternative since it requires no additional capital outlay and maintains the status quo. Further evaluation of the "No-Build" alternative has been included within this document. Comparisons of alternatives within following sections all include this alternative.

ESTIMATED COSTS OF ALTERNATIVES

Estimated costs (1991 dollars) have been prepared for construction, right-of-way requirements and utility relocations for the build alternatives and are presented in Table 2-2. Construction costs have been developed from the alternative designs as shown in Figure 2-13 (Alt. B), Figure 2-14 (Alt. C) and Figure 2-15 (Alt. D). The estimated construction costs contain allowances for construction contingencies, final engineering design and construction administration.

STATE	PROJECT NO.	SHEET
MONTANA	IR 90-8(114)443	

T. 1 S.
R. 25 E.

200 0 200 400
SCALE FEET
SCALE: 1" = 200'

FIGURE 2-15

ALTERNATIVE D

SHILOH ROAD INTERCHANGE

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Right-of-way costs have been estimated based on the alternative designs construction limits. A right-of-way study prepared by MDT evaluated costs for each "Build" alternative including costs for land, improvements, damages and relocation assistance.[4]

The estimated costs associated with required utility relocations have been prepared based on impacts associated with the "Build" alternatives designs.

The FHWA has made a general determination concerning Federal-Aid funding limits for the build alternatives. Based on this determination, estimated costs have been divided into two categories labeled as "FHWA" and "Local". The costs in the "FHWA" category are eligible for participation by FHWA. The additional costs beyond the funding limits established by FHWA have been put in the "Local" category.

TABLE 2-2
ESTIMATED COSTS OF BUILD ALTERNATIVES
(1991 Dollars)

Item	Alternative B	Alternative C	Alternative D
FHWA			
Construction	$11,048,100	$ 9,817,700	$ 9,571,000
Right-of-Way	$ 469,000	$ 614,480	$ 417,400
Utility Relocation	$ 431,320	$ 398,210	$ 468,710
Subtotal FHWA	$11,948,420	$10,830,390	$10,457,110
Local			
Construction	$ 568,400	$ 873,000	$ 854,400
Right-of-Way	$ 54,700	$ 44,120	$ 76,000
Utility Relocation	$ 11,080	$ 19,450	$ 3,670
Subtotal Local	$ 634,180	$ 936,570	$ 934,070
Total Cost	$12,582,600	$11,766,960	$11,391,180

4 Wenger, Richard E., 1991. Relocation Studies: Project No. IR 90-8(114)443 Plans B, C (Option 2) and D Shiloh Road Interchange. Montana Department of Highways

The Intermodal Surface Transportation Efficiency Act of 1991 contains funding allocated for certain projects identified as "demonstration" projects. The Shiloh Road Interchange project has been identified as a demonstration project and 11 million dollars has been allocated for its construction. Eight percent of the allocation is available for obligation in fiscal year 1992. 18.4 percent of the allocation will be available for obligation in each fiscal year 1993-1997. The federal share of projects receiving this type of funding is 80 percent of the project cost.

OPERATIONAL CHARACTERISTICS OF ALTERNATIVES

A. CAPACITY AND LEVEL OF SERVICE

Capacity and level of service, as noted in the Purpose and Need Chapter of this document, are interrelated measures of driver comfort and delay. All of the "Build" alternatives were designed to operate at appropriate design levels of service up to and beyond the design year 2013. Therefore, all in the interchange elements which would be constructed as a part of this project would operate at comparable design levels of service. The only differential levels of service that would exist pertain to connecting system roads. Table 2-3 presents a summary of level of service conditions that would exist on these roads at design year 2013 for each alternative.

The most substantial inferences that can be made regarding the capacity and level of service analysis are:

None of the connecting roadways or potentially impacted streets would operate below a design level of service "C" at the implementation year 1993, if any of the interchange alternatives were constructed. However, Shiloh Road would be degraded from LOS "B" to LOS "C" and in the case of Alternatives C and D, traffic volumes would be very near LOS "D".

TABLE 2-3
ALTERNATIVE LEVEL OF SERVICE SUMMARY

	YEAR 1993				YEAR 2013			
	No-Build	Alt "B"	Alt "C"	Alt "D"	No-Build	Alt "B"	Alt "C"	Alt "D"
Interstate 90 West of Interchange	A	A	A	A	B	B	B	B
Interstate 90 East of Interchange	A	A	A	A	B	B	B	B
I-90 S. Frontage Rd. West of Interchange	B	B	B	B	D	D	D	D
I-90 S. Frontage Rd. East of Interchange	B	A	A	A	D	A	B	B
Shiloh Road I-90 Overpass	C	A	C	C	D	A	C	C
Shiloh Road Immediately N. of Neibauer	B	C	C	C	C	D	D	D
King Avenue West East of S. 24th St. W.	C	C	C	C	E	E	C	C

In the design year 2013, South Frontage Road west of the proposed interchange would operate at LOS "D" no matter what alternative was chosen, including the "No-Build" alternative.

The "No-Build" alternative would create a situation in the design year where four separate road sections would operate at LOS "D" or worse. South Frontage Road east and west of the proposed interchange and the existing Shiloh Road overpass would operate at LOS "D". King Avenue West, east of S. 24th Street West, would operate at LOS "E" (severe congestion).

Alternative B would not offer a viable alternative route for King Avenue West traffic and thus, King Avenue West would operate at LOS "E" in the design year 2013 similar to the "No-Build" alternative.

Alternatives B, C, and D would all cause Shiloh Road from Neibauer Road north to King Avenue to operate at LOS "D" in the design year 2013. In the case of Alternatives C and D, LOS "D" would be realized a short period of time after the interchanges were constructed.

The addition of Alternative D's future connection to Gabel Road would reduce traffic volumes on Shiloh Road sufficiently to maintain LOS "C" operations between Neibauer Road and King Avenue at the design year 2013 while using the existing road section. This fact is most important for local governments, since it could affect their transportation improvement projects priorities list.

B. SAFETY CONSIDERATIONS

All "Build" alternatives would be designed to accommodate projected traffic volumes according to current standards which would insure the best possible combination of safety and efficiency. Accident rates on all portions of roadway constructed as a part of the proposed project would be less than average rates for the class of facility. On portions of the existing roadway system that would not be improved through this project, an increase in the accident rate would be expected with increased traffic volumes, especially on road sections approaching near capacity conditions. The introduction of ramps and intersections into previously uninterrupted traffic sections would also contribute to increased accident experience. These situations along with the fact that "Build" alternatives would increase the total length of roadway in the system would contribute to a net increase in accident experience.

In order to quantify the potential increase in accidents an analysis of future accident potential was completed. Table 2-4 presents the average annual number of accidents that would be expected on area roadways for each alternative on a statistical basis. These calculations assume that no other improvements to the road system would occur other than construction of the interchange elements. Average accident rates for the class of facility were used as a base rate figure. Rates per section of roadway were adjusted based on volume/capacity ratios, roadway geometry and intersection control. None of the section accident rates exceeded the high average rate for the facilities class. Intersection rates were based on City of Billings average accident rates of 1.2 and 1.8 accidents/million vehicles entering unsignalized and signalized intersections respectively.

Results of the analysis indicate that all alternatives, including the "No -Build", would have accident rates higher than the low average, but less than the high average. If South Frontage Road and Shiloh Road were reconstructed to accommodate year 2013 traffic volumes, these rates would drop substantially.

TABLE 2-4

ACCIDENT PROJECTIONS IN YEAR 2013

ROAD SECTION	No-Build	Annual Average Number of Accidents Alt "B"	Alt "C"	Alt "D"	Future Gabel Conn. at Alt. "D"
S. FRONTAGE RD	11.7	10.9	15.9	13.0	13.0
NEIBAUER RD	1.7	6.3	1.1	1.3	1.3
SHILOH RD	31.1	27.7	46.6	45.4	22.8
INTERSTATE 90	29.3	31.7	32.3	33.3	33.3
NEW INTERSECTIONS		15.9	25.2	30.0	37.4
Alternative Totals =	73.9	92.5	121.1	122.9	107.9
Alternatives Average Accident Rates =	2.73	2.90	3.21	3.29	2.90

The "No-Build" alternative would have the lowest accident rate of the alternatives considered. However, accident impacts on other portions of the entire system, which cannot easily be quantified, may offset that advantage. Of the three build alternatives, Alternative B would have an accident rate slightly above the "No-Build" and would be equal to Alternative D with a future connection to Gabel Road in terms of potential accident rate.

It should also be noted that Alternatives C and D are biased toward a higher rate because they would both include three signalized intersections, which add accident numbers at a specific point on the road segments rather than on a defined length of roadway.

C. TRAVEL TIMES

A primary purpose for the proposed project is to reduce travel time for a large portion of western Billings. A model using selected routing between the proposed interchange area's major origin and destination points was developed and travel times based on average speeds and intersection delays was used to quantify travel time differences between the alternatives. Because the model was relative in nature, total travel time for vehicles passing through the study area was not as substantial as the difference between alternatives. The "No-Build" alternative travel time was used as a base and the "Build " alternatives were calculated as vehicle hours of travel time savings. Travel time calculations were based on year 2013 traffic volume projections with no other street improvements other than those which would be provided by the proposed project. It was discovered that Alternative B would have a time savings of 510 vehicle hours per day while Alternatives C and D would save 663 and 686 vehicle hours respectively. The most important results of this analysis are that the proposed interchange would meet the needs of reducing travel time and that Alternatives C and D would be superior in meeting this need.

D. ALTERNATIVE COMPARISONS

Table 2-5 provides a means of illustrating the relative advantages and disadvantages of the reasonable alternatives presented herein. Characteristics of each alternative are listed in a manner which relative comparison can easily be made.

Public demand for a new Interstate 90 access facility has been clearly established and the need for the facility has been addressed within this document and in the Billings Urban Area Transportation Plan. Continued levels of traffic growth and demand projections set forth in the transportation plan indicate that the "No-Build" alternative would cause future level of service problems on King Avenue West, South Frontage Road, Shiloh Road

Overpass and on Shiloh Road north of Neibauer Road. For these reasons as well as social and economic growth considerations, the "No-Build" alternative would not be in the best interests of Billings, Yellowstone County or the State of Montana.

Alternative B, because of its location approximately 0.5 miles west of the existing Shiloh Road Overpass, does not fully meet the stated purpose and need for the proposed action. It does reduce I-90 access travel times for the west Billings area, but traffic diverted from King Avenue West would not substantially improve future capacity problems on King Avenue West. The relative low traffic projections for Alternative B during the design year indicates that the location would not serve the public's travel desires as well as other alternatives.

Alternatives C and D both achieve the stated purpose and need for the action. However, required alignment of the South Frontage Road is a negative aspect of Alternative C. The additional curve lengths and intersection angle would create a slightly higher potential for accidents and would increase travel times in the immediate area to some degree. The location of Alternative C would provide a more direct alignment with Shiloh Road which will be one leg of the future Inner Belt Loop system. Connection to the 32nd Street West leg of the Inner Belt Loop could be made at a point north of Neibauer Road at some future date. However, Shiloh Road would have to be reconstructed shortly after the interchange was built.

Alternative D would be located approximately midway between the Shiloh Road and 32nd Street West legs of the Inner Belt Loop. While the proposed action would construct a crossroad connection to Shiloh Road, local governments would have the future option of constructing a connection to Gabel Road, and thus 32nd Street West when the interchange is being constructed. Implementation of this future option would postpone the need to reconstruct Shiloh Road through the design planning horizon. In this situation, the

TABLE 2-5
COMPARISON OF ALTERNATIVES

CONSIDERATIONS	Alt. B	Alt. C	Alt. D	"No-Build"
1. PURPOSE AND NEED				
Reduces West Billings Travel Times	Yes	Yes	Yes	No
Provides Alternate Interstate Access	Yes	Yes	Yes	No
Adequately Reduces Traffic Demand On King Avenue West	No	Yes	Yes	No
2. OPERATIONAL CHARACTERISTICS				
DESIGN YEAR				
LOS - Interstate 90	B	B	B	B
LOS South Frontage Rd, West	D	D	D	D
LOS South Frontage Rd, East	A	B	B	D
LOS Shiloh Road Overpass	A	C	C	D
LOS Shiloh Road, North	D	D	C	C
LOS King Avenue West	E	C	C	E
Accident Rates	2.90	3.21	2.90	2.73
Travel Time Savings (Vehicle Hours per Day)	510	663	686	0
3. ADDITIONAL REQUIRED R/W (Acres)	59.0	51.1	61.5	0
4. ESTIMATED COST (Millions $)	12.58	11.77	11.39	0

accident rate potential would be less and the travel time savings would be greater than at the Alternative C location. Alternative D would also have the advantage of being better able to serve as alternate access to potential development just west of S. 24th Street West and King Avenue.

The total estimated costs for build alternatives vary as shown below:

Alternative B	$12,582,600
Alternative C	$11,766,960
Alternative D	$11,391,180

These costs include construction costs, right-of-way costs and utility relocation costs. Alternative D is the least expensive of the build alternatives.

The amount of additional right-of-way for the build alternatives is shown in Table 2-5. Alternative D requires the most additional right-of-way at 61.5 acres and Alternative C the least at 51.1 acres. Because of existing development, the cost for the Alternative D right-of-way would be less than Alternatives B or C.

CHAPTER 3 - AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the existing social, economic and environmental setting for the project alternatives. The existing environmental conditions provide the context in which to evaluate the impacts of the alternatives. Data summarized in this chapter has been gathered from a variety of published sources and personal contacts. Sources of information are referenced throughout the text and presented in the bibliography.

POPULATION AND DEMOGRAPHICS

A. POPULATION TRENDS

Yellowstone County's 1990 population was 113,419, making it Montana's most populated county. From 1980 to 1990, the county population grew by 5,384, about a five percent increase.[5] Most of the county's population growth occurred in the first half of the decade. In the late 1980s, population growth was constrained by slow economic growth (Table 3-1).

The population of Yellowstone County is concentrated in the Billings urban area. In 1990, 81,151 persons lived in the City of Billings, 5,686 persons lived in Laurel and 133 persons lived in the small town of Broadview. The Census also reported 26,449 county residents living in unincorporated areas, most of these near Billings.

5 U.S. Department of Commerce, 1991, 1982, 1972, 1962, 1952, U.S. Census of Population 1950-1990. Bureau of Census, Washington, D.C.

Table 3-1

Population Trends
for Selected Areas
1950 - 1990

	Yellowstone County	City of Billings	City of Laurel	Town of Broadview	Unincorporated areas
1950	55,875	31,834	3,663	164	20,214
1960	79,016	52,851	4,601	160	21,404
1970	87,367	61,581	4,454	122	25,876
1980	108,035	66,842	5,498	120	35,575
1990	113,419	81,151	5,686	133	26,449

Source: U.S. Department of Commerce, Census of Population: 1959, 1960, 1970, 1980, and 1990, Bureau of the Census, Washington, D. C.

The land use study area includes all property encompassed by each of the project alternatives and parcels directly adjacent to those alternatives. The resident population of the project area is estimated to be about 50.

B. POPULATION PROJECTIONS

Growth patterns and growth projections for Billings are pertinent to the need for an interchange in the vicinity of Shiloh Road. Early in the decade between 1980 and 1990, the population on the west side of Billings increased by nearly 5,000, accounting for the majority of the urban area's net increase in population.[6]

6 U.S. Department of Commerce, 1991, 1982, 1972, 1962, 1952, U.S. Census of Population 1950-1990. Bureau of Census, Washington, D.C.

Table 3-2

Population Trends and Projections

for Census Tracts 17, 18, and 19

1970-1990

Census Counts[1/]	City of Billings	Census Tract 17	Census Tract 18	Census Tract 19
1970	61,581	5,996	6,345	4,459
1980	66,842	7,182	9,636	5,455
1990	81,151	10,859	10,656	5,686
Growth Projections [2/]				
2000	96,736	12,968	11,581	[3/]6,468
2010	107,389	14,299	13,135	7,251

Sources:

1/ U.S. Department of Commerce, Census of Population: 1970, 1980, and 1990, Bureau of the Census, Washington, D.C. published 1952, 1962, 1972, 1982, and 1991.

2/ Yellowstone County Planning Department, Yellowstone County Comprehensive Plan; Draft. Billings, Mt. 1990.

3/ Census Tract 19 is located west of the Billings city limits. Population projections are linear projections based on 1970-1990 trends.

Table 3-2 displays population trends and projections for the City of Billings and for Census Tracts on the west side of Billings. The table indicates that substantial population growth will occur in areas that would be served by the proposed interchange.

C. DEMOGRAPHICS

The 1990 Census showed that areas on the west side of Billings were more racially homogeneous than either the city or county. In 1990, whites accounted for 98 percent of the populations of Census Tracts 17, 18, and 19. Native American Indians were the largest racial minority living in the three Census Tracts, composing about one percent of the tracts' combined populations.

In 1990, Yellowstone County and Billings averaged 2.3 persons per housing unit. The number of persons per housing unit was greater on the west side of Billings than for either the city or county, reflecting generally younger families.

ECONOMY

A. ECONOMIC BASE

The Yellowstone County Comprehensive Plan identifies regional trade as the largest component of the Billings area economic base. Other important components of the economic base were transportation (motor carriers, railroads and pipelines), federal government employment, oil refining, food processing, miscellaneous manufacturing, mining, state government employment (Eastern Montana College), lodging services, and agriculture. In contrast to the late-1980s, the county's economy expanded early in the decade mainly due to the effects of regional petroleum and coal development and prosperous years for agriculture.

B. EMPLOYMENT

In 1990, the Yellowstone County labor force averaged 64,473 persons. The county's average annual unemployment rate was 4.8 percent, lower than the statewide rate.[7] The county's employment increased rapidly in the early 1980s as a result of regional economic growth.

C. INCOME

In 1988, Yellowstone County residents received $1.7 billion in personal income. Per capita income was $14,356, which was fifth highest among Montana counties.[8]

D. LOCAL BUSINESS

A mix of retail, service and industrial businesses are located in the vicinity of the interchange alternatives.

Elk River Concrete

Elk River Concrete's plant on Shiloh Road fabricates concrete pipe, manholes and bridge decking. Elk River uses the land surrounding the plant as a storage and staging area. Employment at the plant averages about 15 workers, but ranges from three to 40 workers depending on contracts.[9] Elk River has no plans to expand its current operation.[10]

7 Schenkle, Kathy, Labor Analyst, Montana Department of Labor and Industry, Telephone Telephone Conversation, April 11, 1991

8 U.S. Department of Commerce, 1991, 1982, 1972, 1962, 1952, U.S. Census of Population 1950-1990. Bureau of Census, Washington, D.C.

9 Tolletsrud, Milton, Plant Operator, Elk River Concrete, Telephone Conversation, March 20, 1991

10 Gatner, Bob, Business Owner, Elk River Concrete, Telephone Conversation, March 26, 1991

Flynn Quilt and Frame Company

The Flynn Quilt and Frame Company is also located on Shiloh Road. The company employees three people and manufactures frames for making bed quilts. The business markets its products through mail order sales. The business owners' residence is also located at the site.[11]

Canyon Creek Gallery

The Canyon Creek Art Gallery is located on Shiloh Road. This owner operated business caters to drive-in customers. The gallery building is located at the minimum distance from the road right-of-way, and has limited ability to relocate the building at its present location. The business owner's residence is also located at the site.[12]

Wiedrick Crane Service

The Wiedrick Crane Service is housed on Shiloh Road next to the Family Farm. The owner operated company maintains a warehouse/office building which is used to store equipment and manage business operations. The business provides contract services for moving heavy materials and has one employee.[13]

Neibauer Auto Body and Painting

Neibauer Auto Body and Painting operates on the frontage road south of the interstate. The auto repair business employs three people. The major advantage of the current business location is that it is adjacent to the owner's home.[14]

11 Flynn, John, Business Owner, Flynn Quilt and Frame, Telephone Conversation, March 22, 1991
12 Lorenz, Howard, Business Owner, Canyon Creek Gallery, Telephone Conversation, March 22, 1991
13 Wiedrick, Arnold, Business Owner, Wiedrick Crane Service, Telephone Conversation, 1991
14 Neibauer, Ken, Business Owner, Neibauer Auto Body and Painting, Telephone Conversation, March 22, 1991

KGHL Radio Station

The broadcasting towers and a support building for KGHL radio station are located along the frontage road to the east of Shiloh Road. Radial land areas surrounding the towers function as electrical grounds for the towers. The intrinsic dampness of this land area increases the effectiveness of the grounding. The integrity of the ground radials is integral to the AM transmission system.

Daily operation and maintenance functions are performed on site; however, no one is permanently employed in the support building. The station is considering relocating its business operations to the building. An underground civil defense broadcasting facility is also located on the property.[15]

Billings Nursery

The Billings Nursery is located on the frontage road south of the interstate. The nursery site includes both growing areas and a retail store. The company also maintains a retail store in Billings, supported in-part by the frontage road growing area. This growing area is underlain with a solid-set irrigation system and includes trees that take several years to grow to marketable sizes.[16]

The Billings Nursery serves both local and regional markets. The majority of business sales occur during April, May, and June. Sales during this three-month period are crucial to the viability of the business. The nursery employs ten people year-round. Its peak seasonal work-force ranges from 20 to 30 persons.[16]

15 Elliot, Dick, Business Owner, KGHL Radio, Telephone Conversation, March 20, 1991
16 Marble, Bob, Business Owner, Billings Nursery, Telephone Conversation, March 26, 1991

Market Basket

The Market Basket is a small grocery/convenience store located at the intersection of the frontage road and Wise Lane. The store provides groceries and miscellaneous dry goods to nearby households. The store also serves non-local commuters and others traveling the frontage road. The store has two full-time and two part-time employees.[17]

Family Farm

The Family Farm is a family owned and operated-business located on the northeast side of the Shiloh Road Overpass. The business provides farm entertainment for families by appointment. Clients include Billings area and non-local residents. The business uses all of its available land area. The family home is also located on the property.[18]

ZooMontana

ZooMontana is a planned 70-acre wildlife park and botanical garden to be located directly north of the Esther Rose Subdivision with access off of Shiloh Road. Design plans have been completed, and successful fund raising events have taken place. In July 1990, the organization received county approval for the zoo subject to conditions addressing visual screening, pedestrian walkways, and signing. Some Phase I construction has been initiated. ZooMontana expects to attract 130,000 visitors a year. When operational, the project would employ 11 persons year-round and another ten persons seasonally.[19,20] At the initial public scoping meeting, area residents expressed concern about cumulative effects of the zoo and the interchange on their neighborhood.

17 Strand, Arnie, Market Basket, Telephone Conversation, 1991
18 Yost, Karen, Family Farm, Telephone Conversation, 1991
19 Duncan, Jim, Administrator, ZooMontana, Personal Communication, September 19, 1989
20 Schile, Wayne, Campaign Chairman, ZooMontana, Personal Communication, September 19, 1989

Oscar's Dreamland

Oscar's Dreamland is a family owned and operated museum complex approximately 1½ miles south of the Shiloh Road overpass on Wise Lane. This museum complex occupies a 17 acre site and includes a large collection of gasoline and steam powered farm equipment. The collection also includes historic buildings that have been moved to Oscar's Dreamland from their original sites.

Other Small Businesses

Other small businesses located in the homes in the project area are Town and Country Upholstery and Curt's Lawn Mower Service.

Local Agriculture

The agricultural land located near the proposed interchange sites is some of Montana's most productive farm land. Sugar beets are the principal crop grown in the area. Data from the Montana Department of Agriculture indicated that in 1989, Yellowstone County sugar beet farmers produced an average of 16.7 tons of sugar beets per acre, valued at $43.30 per ton.

E. TAXABLE VALUES

The proposed interchange project would be within the taxing jurisdictions of Yellowstone County, Billings High School District 2, and elementary school districts 4 (Canyon Creek Elementary) and 23 (Elysian Elementary School). Portions of the project area are also in special service districts that levy taxes or charge fees to cover service delivery costs. Examples are irrigation districts and rural fire districts.

Table 3-3
Taxable Values
of the Project Corridor
for Shiloh Road Taxing Jurisdictions
1990 -1991

Taxing Jurisdiction	Taxable Value
Yellowstone County	$193,079,247
Billings High School (District 2)	$156,460,807
Canyon Creek Elementary School (District 4)	$ 1,832,965
Elysian Elementary School (District 23)	$ 6,202,965

Source:

County Assessor, Yellowstone County, Billings, Mt. 1991

LAND OWNERSHIP AND LAND USE

The land use study area includes all property encompassed by each of the project Alternatives B, C, and D, and parcels directly adjacent to those alternatives (Figure 3-1).

A. LAND OWNERSHIP

The majority of property within the land use study area is privately owned with the exception of the MDT right-of-way for Interstate 90 and the South Frontage Road. The right-of-ways for Shiloh Road and nearby roads and streets also fall under public ownership. Quasi-public ownerships include the Montana Rail Link and other utility rights-of-way paralleling the highway. ZooMontana, a nonprofit corporation, owns a site that is currently being developed to the north of the study area boundary (Figure 3-1).

B. CURRENT LAND USE

Land use in the study area is best described as transitional. The corridors on both sides of Interstate 90 host a mixture of industrial, residential, agricultural and commercial uses (Figure 3-1). The north side of the interstate is relatively more densely developed, except east of Shiloh Road Overpass where it is agricultural. Traditional agricultural uses are slowly giving way to both residential subdivisions and major industrial sites.

South of the interstate, land use is predominantly agricultural although commercial and residential development has occurred. To the east, the radio station and towers, Billings Nursery and the Market Basket grocery store border agricultural land. Aside from this, a few single family homes and agricultural land cover the southern study area.

In anticipation of west-end growth, a number of industrial subdivisions have occurred north of the study area and east of South 32nd Street West. Many have not achieved full build-out.

Similar motivation has prompted a group of certificates-of-survey, both for industrial and residential purposes, in the north study area. Again, many of these tracts remain vacant or store agricultural or industrial equipment.

C. AGRICULTURAL LAND USE

As mentioned in the above discussion, much of the study area is in agricultural use, particularly the southern portion. Most of this is irrigated cropland producing corn, sugarbeets and alfalfa on soils that are considered "prime" farmland if irrigated. In 1980, there were 86,432 prime farmland acres in the county, and 121,776 acres of statewide importance. This includes acreage that is..." nearly prime and that economically

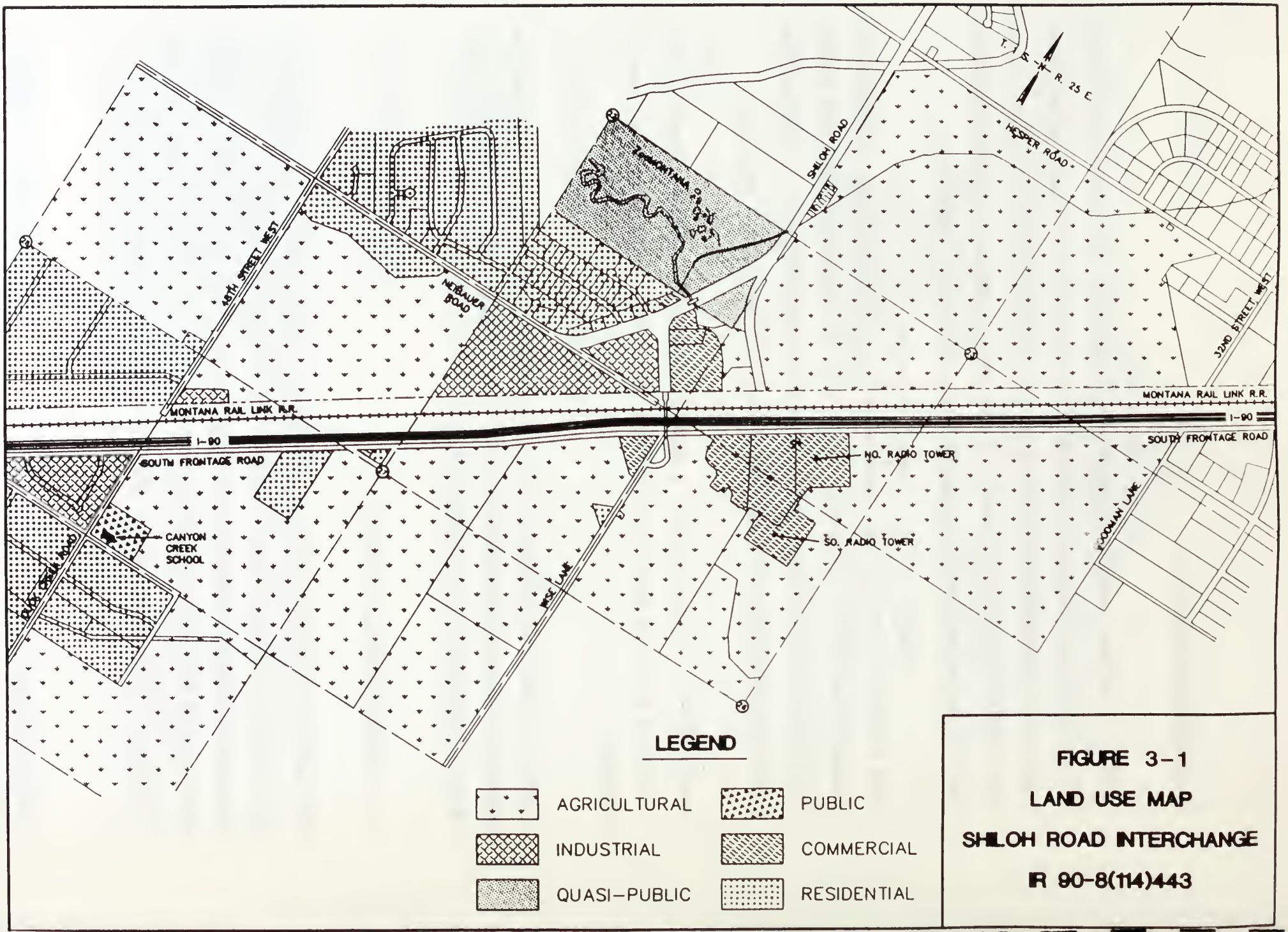


FIGURE 3-1

LAND USE MAP

SHILOH ROAD INTERCHANGE

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produce(s) high yields of crops when treated and managed according to acceptable farming methods."[21]

The Federal Farmlands Protection Policy Act of 1981 (FPPA) requires that impacts be determined and appropriate mitigation be proposed when a federally funded project may convert prime or unique agricultural lands, or lands of statewide or local importance. The Soil Conservation Service was contacted to determine the agricultural viability of soils within the study area, and a federal Farmland Conversion Impact Rating Form (AD-1006) filled out by the district conservationist. Viability is based not only on soil capability but other social, economic, and environmental factors. The district conservationist determined that, even though soils under each alternative are utilized as farmland, and possess qualities comparable to other prime and important soils in the county, the proximity to more intensive land use and transitional nature of the area limits the continued agricultural use of some of the lands adjacent to the project alternatives.

The County Comprehensive Plan recognizes the importance of agricultural land and its economic contribution to the county through numerous agricultural land and water conservation policies. The thrust of these policies is to reduce land use conflicts with agriculture, and to protect agricultural lands and production wherever possible.

Agricultural landowners have expressed concern over disruption of their operations, or conversion of agricultural land to other uses, especially in relation to development of Alternative D.

21 Yellowstone County Planning Department, 1991. Yellowstone County Comprehensive Plan, 1990

D. FUTURE LAND USE

In order to assess land use trends in and adjacent to the study area, Mr. Bill Armold, the Yellowstone County Planning Director was interviewed.

According to Mr. Armold, there have been few new subdivisions in Billings or in this area in the last three years. Between King Avenue West and the interstate, there has been little recent growth although new industrial and highway commercial development will likely occur because of conducive zoning and good rail and highway transportation. Public facilities have also been sized to accommodate industrial uses.

North of the immediate study area, a recent storm drain master plan shows a major retention area for stormwater runoff. Current gravel operations aid in drainage retention and may be expanded west of the existing site. Residential subdivisions may be restricted by drainage conditions.

Anheuser Busch considered a large industrial development in the immediate area. It is conceivable, therefore, that other major industries would find the study area attractive. Simplot, located adjacent to I-90 and 48th Street West, contacted the MDT in August of 1989 to convey their plans to upgrade or build a new facility at the present location. The Billings Fire Department may also locate a new fire station within the immediate study area, but timing of this project is uncertain and dependent on the demands of new growth. The primary project affecting the study area, with or without the interchange, is ZooMontana.

E. COMPREHENSIVE PLANNING

The Land Use element of the 1990 County Comprehensive Plan designates the project area as "Urban Transition". This designation includes:

"Lands adjacent to or in close proximity to the urbanized area and not served by municipal services. These are areas where future development should be encouraged when consistent with the goals of this plan; areas where municipal services are either planned for or should be directed at lower than urban densities. Included in this category are productive agricultural lands that are in close proximity to urbanized lands or are directly affected by the impacts of urbanized land".

The Land Use element also contains policies that discourage uncontrolled strip development, and that minimize the impact of traffic on residential areas.

The Yellowstone Board of County Commissioners has submitted a letter in support of Alternative D, based on preliminary meetings with the planning staff, local citizens, and the Technical Advisory Committee (TAC). It has also recommended a special planning project for the ultimate location of an interchange in the interest of seeing a "high quality, diverse" land use pattern develop at the west entrance to the City of Billings. The study would begin when a final alternative was chosen, and would make recommendations as to the kind of development that would be most beneficial to the city and county.

In July 1990, the Yellowstone County Board of Planning expressed their local commitment for Shiloh Road Interchange to the Billings District Engineer, MDT, referring to the $150,000 contribution made for road improvements connecting to the interchange, including future construction of a north frontage road. The Board strongly supported Alternative D for the following reasons: The Board felt it would create the least impact on existing land uses, it would allow future land use to develop in accordance with locally adopted planning goals and objectives, and would help facilitate development in the area. The direct connection to Shiloh Road in conjunction with the future North Frontage Road extension, known as the Gabel Road Extension, from the Tierra-Yellowstone/Cenex Park industrial sites was seen as providing a more viable street

network. Shiloh Road now functions as a major arterial, as classified in the 1990 Transportation Plan. It is also the only major north/south arterial on the west end of Billings that provides a continuous link from Interstate 90 to Rimrock Road. Shiloh Road is also targeted for future reconstruction to a four-lane divided roadway with new signals at all major intersections. Given these reasons, the Board reiterated their support for Alternative D's location and design. The project is in conformance with the overall transportation plan for the county and is shown in the FY 91-95 Transportation Improvement Program (TIP).

A group of interested citizens known as the Strategic Planning Process Participants have produced a preliminary report entitled A Report of the Strategic Planning Process for Billings, Yellowstone County and the Surrounding Region (unpublished as of 3/20/91). In this report, the concept of a Shiloh Road interchange is strongly endorsed. The justification mentioned is improvement of restrictive traffic flow in and out of Billings.

F. ZONING

The majority of the study area is zoned A-1 Agricultural Open Space. The only exception to this in the study area south of I-90 is the Controlled Industrial site occupied by the Market Basket. A-1 zone districts are intended to preserve agricultural lands for a variety of agricultural and environmentally compatible purposes.

To the north of the interstate, the Esther Rose Subdivision and Neibauer Tracts (Family Farm) are zoned for residential use. The Elk River and Flynn sites, and some lands south of Hesper Road and east of Shiloh Road are zoned Controlled Industrial (CI). A small parcel adjacent to Shiloh Road north of the ZooMontana site is zoned Neighborhood Commercial. The current zoning in the project vicinity is shown on Figure 3-2.

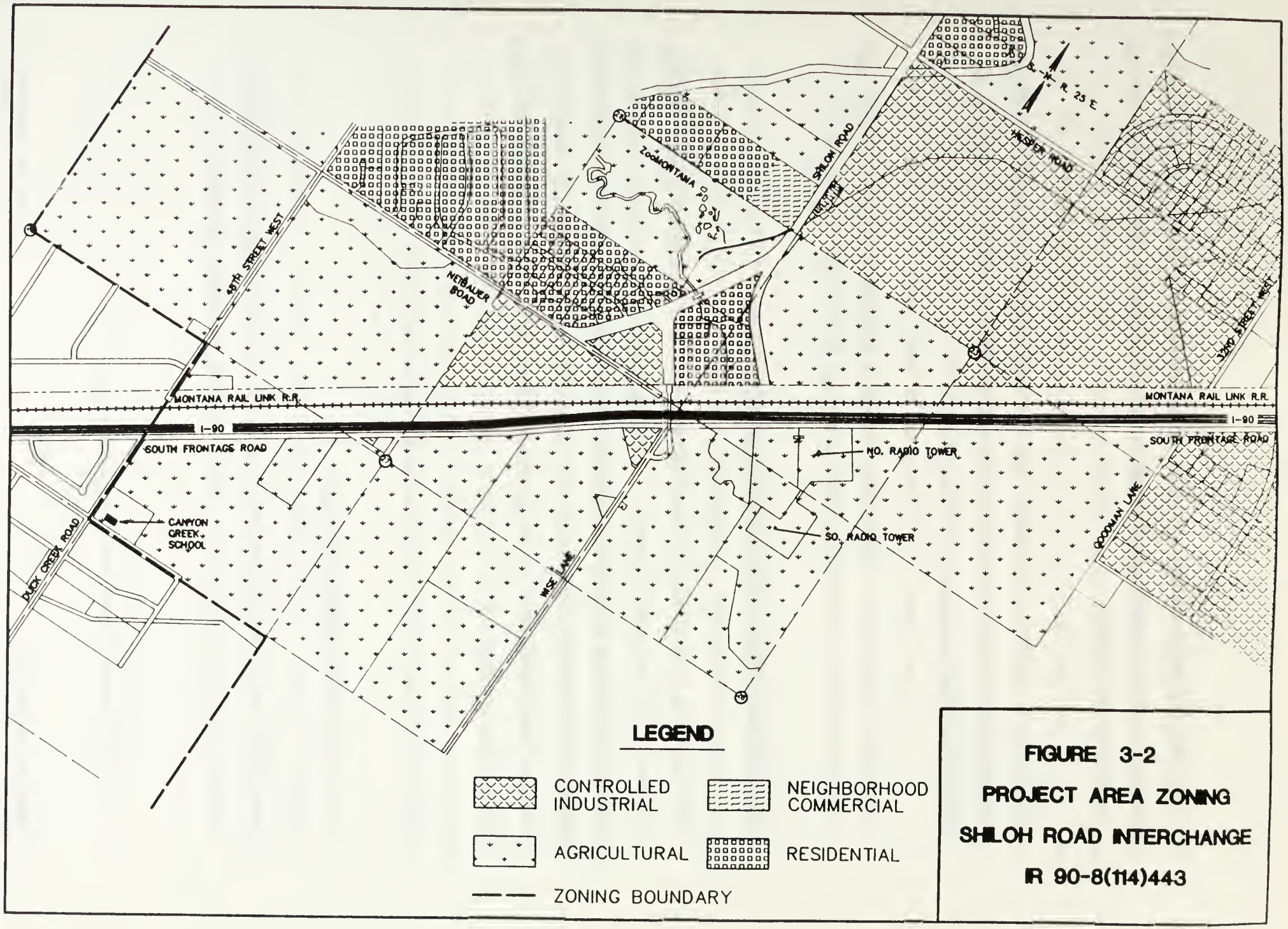


FIGURE 3-2

PROJECT AREA ZONING

SHILOH ROAD INTERCHANGE

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Controlled Industrial zoning is intended to accommodate a variety of uses including business, warehouse, and light industrial. All lands west of 48th St. West and Duck Creek Road are unzoned.

Ultimately, a permit zoning district may be enacted for lands around an approved interchange site to assure orderly development consistent with the recommendations of the planning study mentioned previously.[22]

At present, zoning district requirements, including setbacks from arterial roads, apply within the portions of the study area that are zoned.

COMMUNITY INFRASTRUCTURE AND LIFESTYLE

The study area is all within the unincorporated area of Yellowstone County. Billings, however, is the focal point for services, shopping, employment, and high schools for area residents. Residents of the northern portion of the study area along Neibauer Road live primarily in residential subdivisions, while south area residents are mainly farm families. Canyon Creek School serves as an organizational base for residents concerned with issues facing the study area.

Services that could be affected by the project are discussed in the following narrative.

A. WATER AND SEWER SERVICE

None of the area is within the city limits of Billings and therefore is not served by municipal sewer or water service. Wells and septic tanks serve the area.

22 Arnold, Bill, Yellowstone Co. Planning Director, Telephone Conversation, January 2, 1991

In 1988, a major industrial proposal on 345 acres north of the Shiloh Road overpass and east of Shiloh Road, prompted the Hesper Road Planning Study. This study indicated that municipal sewer and water mains are extended up to, and just west of, South 32nd St. West. Since the study was completed, land up to Shiloh Road was added to the Urban Planning Area (UPA). This would allow for extension of sewer and water service to parcels in the UPA requesting and receiving both annexation, and acceptance into the sewer and water service area. Into the foreseeable future, extension of municipal sewer and water service is unlikely south of Interstate-90 in the study area.

B. EMERGENCY SERVICES

Fire protection in the study area is administered by a rural fire district that has a response agreement with the City of Billings Fire Department. Property within the district is assessed for fire protection on the county tax rolls.

Property on the north side of the interstate that may eventually annex to the city would be eligible for municipal fire protection. According to the Hesper Road study, the Billings Fire Department is in the long-range planning phase for a new west-end fire station. The two general locations being considered are the north and south ends of Shiloh Road. The Yellowstone County Planning Director has indicated that the construction of an interchange in the Shiloh Road area would favorably influence the location of a station at a southern location.

Police protection is provided by the County Sheriff's Office. There is no regularly scheduled patrol of the study area. The Montana Highway Patrol (MHP) is the enforcement agency responsible for I-90.

Emergency medical services are handled by both Deaconess Hospital and St. Vincent's Hospital between seven and ten miles from the study area. The nearest ambulance service is provided by West End and Arrow Medical Services. The HELP helicopter can also be dispatched from St. Vincent's Hospital. Emergency outpatient treatment facilities are located on South 24th St. West, about five miles from the study area.

C. SCHOOLS

There are no schools in the study area between Alternatives B and D. There are estimated to be about 25 school-age children living in the immediate study area. Elementary school children living in District #4 attend Canyon Creek School on Duck Creek Road about 3/4 mile southwest of the study area. The potential impacts from an interchange location near this school were a primary factor in rejecting Alternative A from further consideration.

Those in District #23 attend Elysian Elementary, located north of the study area at 6416 Elysian Road. Both of these schools serve kindergarten through eighth grades. Figure 3-3 shows school district boundaries and locations.

High school students from the study area attend Billings West High, located on St. John's Avenue at 24th St. West.

School buses travel portions of the study area from 7:00 to 8:15 a.m., and from 3:00 to 4:00 p.m. on weekdays during the school year. The only bus-stops on Canyon Creek School's routes within the project area are at Flynn Quilt and Frame Company and the Market Basket Store. The Elysian School bus route has a stop on Shiloh Road at the ZooMontana sign, and stops on Harvest Lane; both 1/4 to 1/2 mile north of the study area. The Billings West High School bus travels outside the perimeter of the study area except where it crosses the Shiloh Road Overpass, and passes along portions of Wise

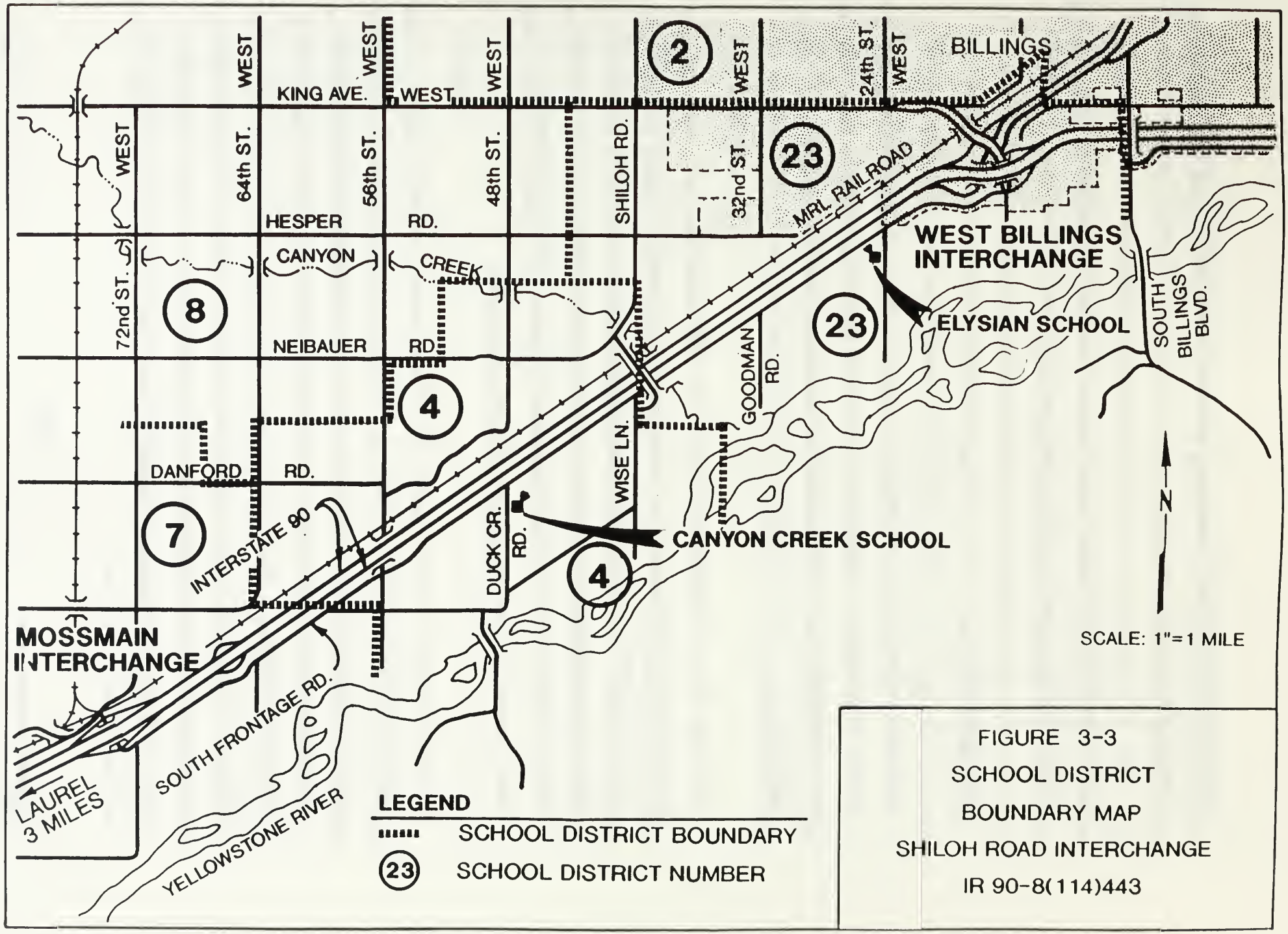


FIGURE 3-3
SCHOOL DISTRICT
BOUNDARY MAP
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

Lane and Neibauer Road. It stops only at the intersection of Neibauer Road and Harvest Lane within the project corridor.

School enrollment information is not included here since enrollment would be affected to only a minor degree, if at all, by the project.

AIR QUALITY

Attainment and maintenance of National Ambient Air Quality Standards (NAAQS) is the primary responsibility of each state. The current State Implementation Plan (SIP) has been developed for the implementation, maintenance and enforcement of air quality standards.

The Clean Air Act Amendments (CAAA) of 1990 established new, more stringent requirements for determining the conformity of transportation plans, programs and projects with SIP's. Further the CAAA requires the revision of SIP's by November 15, 1992 to include specific strategies for controlling and reducing emissions. The current Billings Transportation Plan and Transportation Improvement Program (TIP) have been found to conform under the Interim Conformity Guidelines.

Air quality concerns in recent years in the Billings area have related primarily to Total Suspended Particulates (TSP) and Sulphur Dioxide (SO_2) levels and their relationship to area oil refineries. In July, 1989, levels of Carbon Monoxide (CO) were identified as a concern by the Montana Department of Health and Environmental Sciences (MDHES) in two areas of Billings. These areas are the central business district and the 24th Street West area. The central business district is located in the heart of downtown Billings approximately five miles northeast of the project area. The 24th Street West area is an area of commercial development, primarily retail shopping, approximately three miles northeast of the project area.

In 1977, Billings was designated by the EPA as non-attainment for CO. The official non-attainment area is the 1978 city limits of Billings plus a small surrounding area. An attainment plan was developed, approved by the EPA and completed in 1984. Data collected following area improvements indicated compliance with the standards. The 24th Street West area has been the subject of a short-term monitoring program. The results of this short-term program indicate compliance with the standards and are being further evaluated to determine if long-term monitoring in the area is desirable. If monitoring in Billings continues to show compliance with NAAQS, Billings could apply for attainment status in 1992.

On May 26, 1988, Billings was designated as a non-attainment area for TSP. The 1988 standard for TSP has been revised. Billings is considered to be in compliance with the new standard.

When Billings was designated as a non-attainment area, a Transportation Control Plan (TCP) was developed to mitigate the air quality problems. The TCP is the Billings Element of the SIP. The proposed action is in an area where the SIP does not contain any transportation control measures.

NOISE

Ambient noise level measurements were taken in the vicinity of each of the build alternatives. These field measurements were correlated to existing traffic conditions and then used to evaluate the existing peak hour noise levels (Leq(h) dBA) at various sites. Leq(h) dBA is the hourly value of the equivalent steady-state sound level which contains the same acoustic energy as the time varying sound level. The sound level is measured in decibels (dB), using an "A" weighted filter. The designation "dBA" indicates a noise level reading that represents the frequency characteristics of the average human ear for

various sound intensities. The sites selected were representative of potentially noise sensitive locations or "worst case" locations. The sites evaluated are identified below by site number and description and are shown on Figure 3-4.

Site Number	Description
1	Residence; south of frontage road
2	Residence; north of Neibauer Road
3	Residence; south of I-90, east of Wise Lane
4	Residence; south of I-90, west of Wise Lane
5	Residence; south of I-90, east of Wise Lane
6	Residence; north of I-90, east of Shiloh Road
7	Gallery; north of I-90, west of Shiloh Road
8	Residence; north of I-90, east of Shiloh Road
9	Radio Station; south of frontage road
10	Site; south of frontage road
11	Site; north of Gabel Road

Ambient noise levels at the sites evaluated range from 50-70 Leq(h) dBA. The ambient noise levels are summarized and compared to projected noise levels in the Environmental Consequences Chapter of this document.

LANDFORM AND VEGETATION

The project area is located in the broad and flat Yellowstone River valley on unconsolidated terrace deposits. These deposits generally consist of silt, sand and clay overlaying gravel. Bedrock of the area is the Colorado Shale and may be encountered underlaying the gravel deposits at depths from 20 to 60 feet.

Vegetation types in the project area are determined primarily through current land use. The majority of surrounding land is intensively farmed. Agricultural crops include corn, sugar beets and alfalfa. Topography in the area is flat, lending itself to irrigation. Approximately 14 to 16 inches of precipitation are received on an annual basis. In addition to the agricultural use, adjacent land has been altered from its natural state and is currently being developed as residential or commercial property.

An undeveloped corridor exists along Canyon Creek as it traverses through the project area. The creek has cut a deep channel through the alluvial soils allowing the development of mature riparian tree-shrub communities for an area of between 15 to 100 yards on either side of the creek. Detailed discussion of vegetation types occurring in the project area in conjunction with the wetland sites is included in the Wetland Evaluation and Biological Assessment.[23]

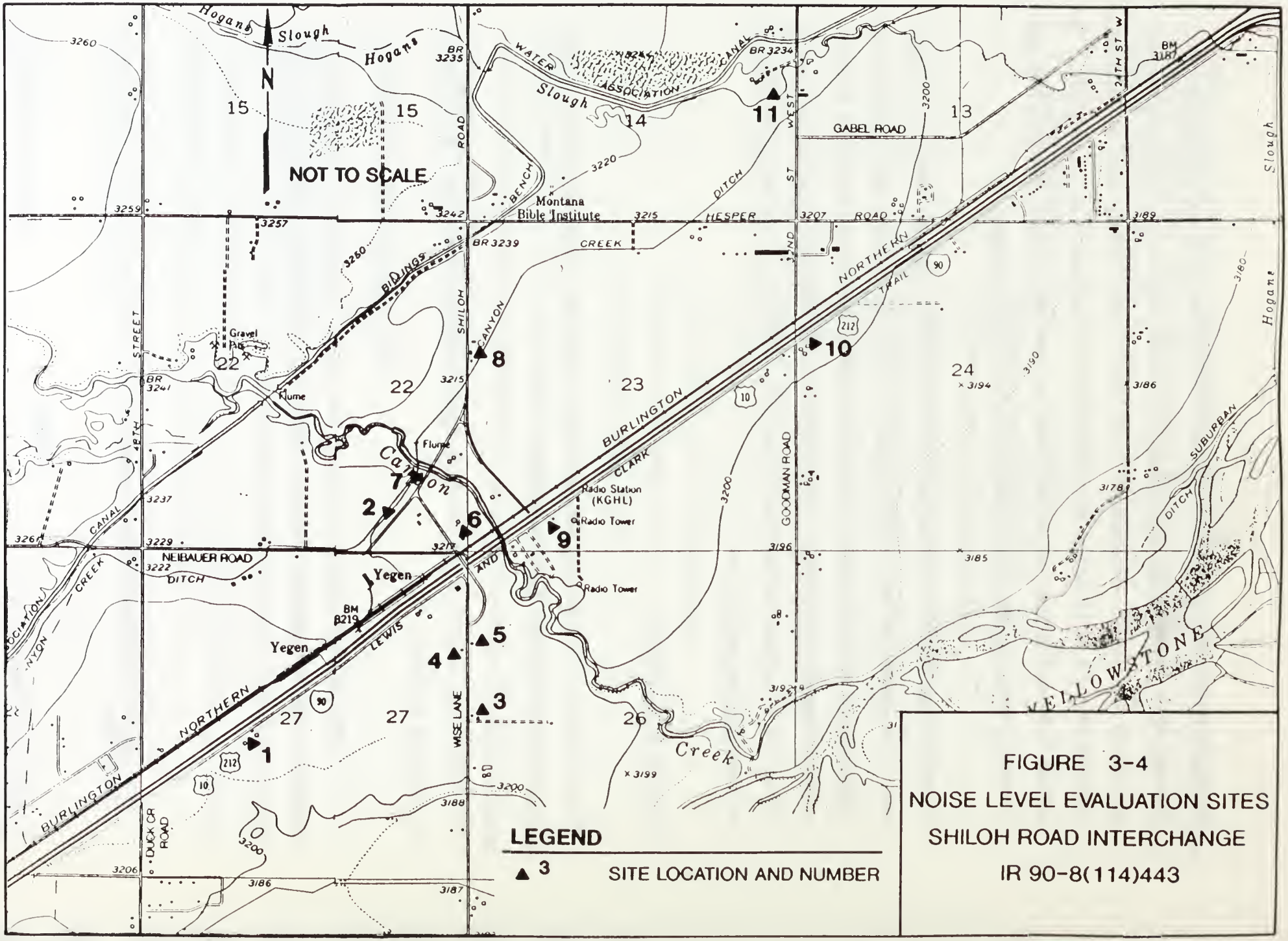
WATER RESOURCES

Water resources in the general project vicinity include the Yellowstone River, Canyon Creek, irrigation ditches and groundwater.

The Yellowstone River flows northeasterly approximately parallel to and 1½ miles south of Interstate 90 (I-90).

Canyon Creek flows southeasterly through the project area to the Yellowstone River. Canyon Creek is currently crossed by bridges on Shiloh Road, I-90 and the South Frontage Road.

23 ECON, Inc. 1989. Wetland Evaluation and Biological Assessment for Montana Department of Highways Project IR 90-8(114)443 Shiloh Road Interchange


NOT TO SCALE
N
LEGEND
▲ 3 SITE LOCATION AND NUMBER
FIGURE 3-4
NOISE LEVEL EVALUATION SITES
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

The Billings Bench Water Association (BBWA) and Canyon Creek irrigation ditches are in the project vicinity. The BBWA canal flows northeasterly approximately one mile north of I-90. The Canyon Creek ditch flows northeasterly approximately ¼ to ½ mile north of I-90. These ditches are the basis of a system of flood irrigation.

Groundwater in the vicinity occurs from depths of ten to 20 feet.

WETLANDS

A wetland evaluation and biological assessment was prepared for the project area. The evaluation was designed and conducted to comply with the requirements of the "Interagency Memorandum of Understanding: Management and Mitigation of Highway Construction Impacts to Wetlands in the State of Montana", dated 1989, Helena, Montana. This interagency wetlands group consists of the Montana Department of Transportation, Montana Department of Fish, Wildlife & Parks, Montana Department of Health & Environmental Sciences, Federal Highway Administration, Montana Division of the Environmental Protection Agency and the Montana Office of U.S. Fish & Wildlife Service.

The evaluation identified seven sites in the project area that have been classified as wetlands. In order to be classified as a "wetland", a site must possess hydric soils, hydrophytic vegetation and hydrologic regime. These criteria have been defined by the EPA and accepted by other federal agencies including the U.S. Army, Corps of Engineers. All of the wetland sites occur as part of the Canyon Creek corridor (Figure 3-5). None of the seven sites exceed one acre in size. Collectively, the total acreage of the seven sites is 1.98 acres. Given the visual impact of large, well-developed stands of trees, shrubs and various herbaceous species surrounding a flowing stream, it is difficult to perceive only two acres of "wetlands" within the entire proposed project area. However, the guidelines for evaluating wetlands are specific in definition. Relatively few

areas actually possess the vegetation and soil conditions necessary for such a classification. More often than not, the mere presence of cattail or sedge species elevated the site to "wetland" status.

According to information supplied by adjacent landowners, nearly all the water flowing into Canyon Creek is derived from irrigation run-off and seepage. One important fact, which is striking at first view of the creek water, is the load of suspended sediments. No important aquatic life (plant nor animal) survives the stress from continual sedimentation during the irrigation season. Following the irrigation season, surface run-off and shallow aquifer recharge from nearby cropland ceases which reduces both volume of flow and water turbidity. The combination of extremely turbid water and fluctuating flows has not permitted the establishment of wetland species.

Table 3-4 lists the functional values of the wetland sites.

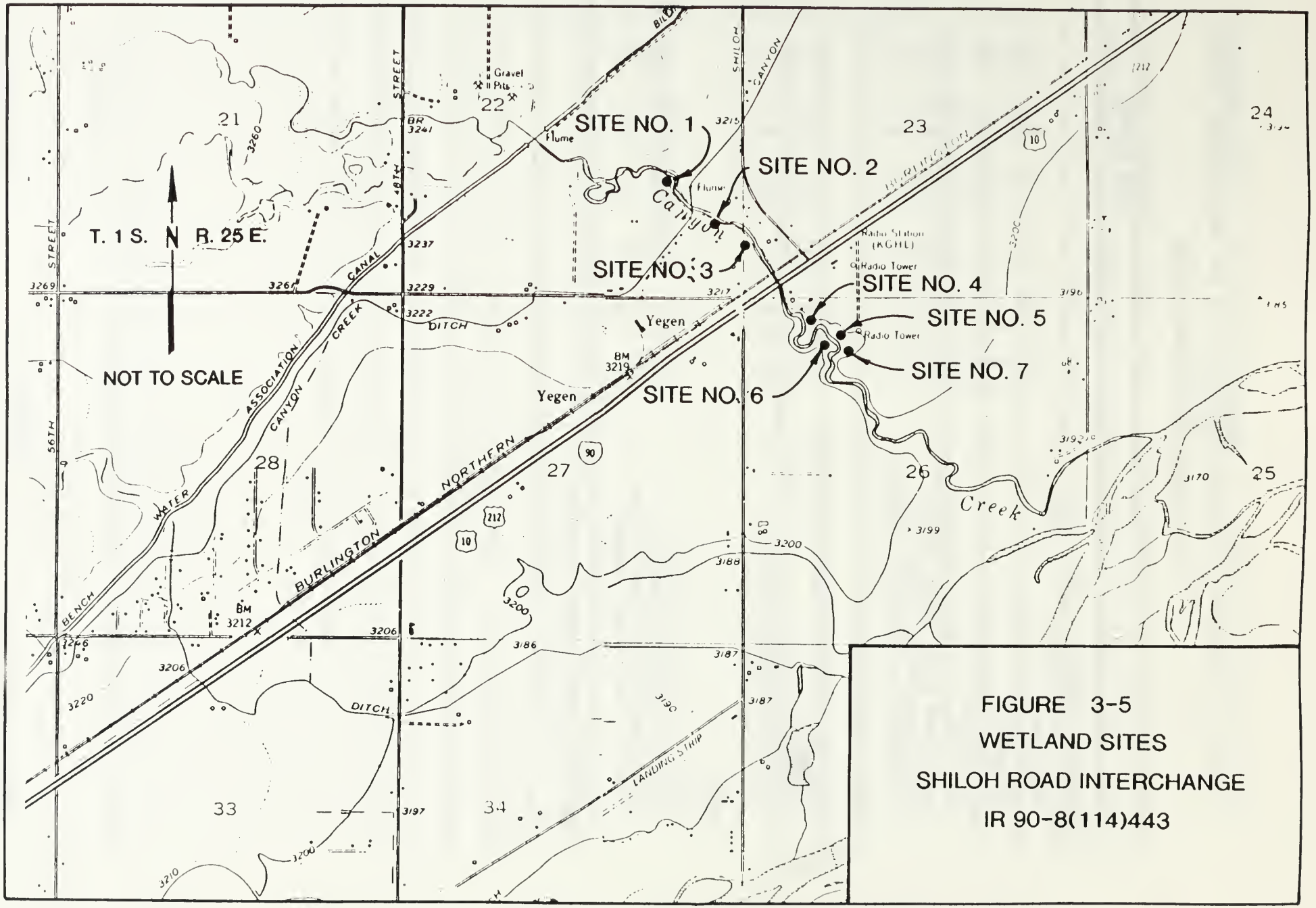


FIGURE 3-5
WETLAND SITES
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

TABLE 3-4
SUMMARY OF FUNCTIONAL VALUES BY INDIVIDUAL SITE FOR THE WETLANDS EVALUATION OF THE
SHILOH ROAD INTERCHANGE PROJECT

	SITE NUMBER						
	1	2	3	4	5	6	7
WILDLIFE HABITAT							
Waterfowl	1.0	1.0	0.3	1.0	1.0	1.0	1.0
Upland Game Birds	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Songbirds.	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Raptors and Others	0.3	0.3	1.0	1.0	1.0	1.0	1.0
Furbearers	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Non-furbearing Small Mammals	0.3	1.0	1.0	1.0	1.0	1.0	
Ungulates (Elk, Moose, Deer)	0.3	0.3	1.0	1.0	1.0	1.0	1.0
Large Carnivores (Bear, Cat)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Threatened or Endangered Species	0.3	0.3	1.0	0.3	0.3	0.3	0.3
FISHERIES HABITAT							
Montana Fishes of Special Concern	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trout	0.3	0.3	0.3	0.3	0.3	0.3	0.0
Other Salmonids	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-salmonid Game Fish	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-game or Rough Fish	0.3	0.3	0.3	0.3	0.3	0.3	0.0
OTHER							
Sediment Control Rating	3.0	3.0	3.0	3.0	3.0	3.0	2.0
Nutrient Retention Rating	2.0	2.0	2.0	2.0	2.0	2.5	2.0
Relative Flood Storage Rating	1.0	1.0	1.0	1.0	1.0	1.0	2.0
Relative Food Chain Support	1.0	1.0	1.0	2.0	2.0	3.0	3.0

Out of a possible high score of 3

FLOODPLAINS

Delineated floodplains in the project vicinity include those associated with the Yellowstone River and Canyon Creek. The project build alternative locations are beyond the north boundary of the Yellowstone River floodplain. The Canyon Creek floodplain passes through the project area as Canyon Creek flows southeast to the Yellowstone River. The floodplain locations as they relate to the project alternatives are discussed in the Environmental Consequences Chapter of this document.

The project area is beyond the limits of the City of Billings and comes under the jurisdiction of Yellowstone County. Yellowstone County has adopted floodplain development regulations and is participating in the Regular Phase of the National Flood Insurance Program.

FISH AND WILDLIFE

A wetland evaluation and biological assessment has been performed for the project area.[24] The majority of adjacent land has been subjected to development (residential, commercial, agricultural) and therefore provides little wildlife habitat. The undeveloped riparian corridor along Canyon Creek offers habitat conditions not commonly found in the general area. The importance of the corridor to local wildlife for food and cover is not diminished by the lack of true wetland species. This corridor provides the only habitat for year-round food and cover requirements in the immediate area.

24 ECON, Inc. 1989. Wetland Evaluation and Biological Assessment for Montana Department of Highways Project IR 90-8(114)443 Shiloh Road Interchange

The present Interstate 90 and adjacent railroad corridor right-of-ways are well-vegetated. These rights-of-way and the Canyon Creek corridor present an opportunity for travel for mammals such as mink (Mustela vison), raccoon (Procyon lotor), muskrat (Ondatra zibethicus), striped skunk (Mephitis) and an occasional red fox (Vulpes). Small rodents are present in the highway and railroad borrow pits and in the nearby croplands north and south of the transportation corridor.

The project area includes habitat seasonally utilized by robin (Turdus migratorius), Brewer's blackbird (Euphagus cyanocephalus), Western meadowlark (Sturnella neglecta), savannah sparrow (Passerculus sandwichensis), mourning dove (Zenaida macroura), ring-necked pheasant (Phasianus colchicus), magpie (Pica), gray partridge (Perdix) and other species common to the Yellowstone Valley.

Canyon Creek represents the only active stream in the immediate project vicinity. Canyon Creek is a perennial tributary of the Yellowstone River. The confluence of Canyon Creek and the Yellowstone River is approximately 1-1½ miles south of the project area. The fishery value of Canyon Creek is low due to the influence of existing developments including irrigation wastewater.

THREATENED OR ENDANGERED SPECIES

The U.S. Fish and Wildlife Service (USFWS) has been consulted regarding the presence of threatened or endangered species in the project area. The USFWS has determined that bald eagles and peregrine falcons are the only two threatened or endangered species that may utilize the project area. A Biological Assessment has been prepared in accordance with Section 7(C) of the Endangered Species Act Amendment of 1978. The bald eagle (Haliaeetus leucocephalus) occurs nearby along the Yellowstone River as a winter resident and seasonal migrant and the peregrine falcon (Falco peregrinus) may occur as a migrant.

HISTORIC AND ARCHEOLOGICAL RESOURCES

Cultural resource inventories have been performed for the project area in accordance with the requirements of 36 CFR 800.4.[25,26] The State Historic Preservation Office (SHPO) has been consulted regarding the cultural resource inventories findings.

The inventories included a file search by SHPO, a pedestrian survey of the project area and an evaluation of historic resources. The evaluation of historic resources included review of the Bureau of Land Management (BLM) land records, Yellowstone County Assessor records, Deed Records at the office of Clerk and Recorder, inspection of 1950 Soil Conservation Service (SCS) aerial photos, conversations with past and present residents, and inspection of all structures in or adjacent to the project area. All standing structures in or within 100 meters of the project area were investigated and inventoried if old enough. The construction date of 1945 was used as the cut-off for recording structures as historic. This was determined by reviewing the 1950 SCS aerial photos and/or interviews with present or past property owners.

On-site investigation of each site consisted of a physical analysis of all standing buildings and structures (i.e., features), a scaled sketch map, and photographs. Information recorded on the physical attributes of individual features included overall composition, materials, alterations, function, condition and dimensions in feet.

25 Ethnoscience, 1989. Cultural Resource Inventory of the Proposed Duck Creek Road and Shiloh Road Interchanges and A Segment of I-90

26 Ethnoscience, 1990. Cultural Resource Inventory for the Proposed Montana Department of Highways Alternate D of the Shiloh Road Interchange Project

The cultural resource inventories for the project area did not locate any prehistoric cultural material. Thirteen historic sites in the vicinity of Alternates B, C and D were identified by the inventories. These sites included a portion of the Montana Rail Link railroad and the Canyon Creek Ditch but consisted primarily of structures/features associated with farmsteads in the area. Of the historic sites evaluated, only Site No. 24YL891, the Canyon Creek Ditch has been determined to be eligible for listing on the National Register of Historic Places. The other sites have been determined to be ineligible due to alternations to the original character of the sites resulting in the loss of integrity. In addition the structures were determined to be not architecturally significant or associated with important people or events.

Construction of the Canyon Creek Ditch began in 1883 and the ditch was in service by 1886. The ditch, which still retains its physical integrity, is one of the earliest constructed features in the area and played a vital role in agricultural development of the Yellowstone River Valley. The headgate structure is believed to have last been modified sometime between 1920-1927. The ditch is eligible for listing under 60.6a of the National Register Criteria for evaluation. The location of the Canyon Creek Ditch as it relates to the project alternatives is discussed in the Environmental Consequences Chapter of this document.

HAZARDOUS WASTE

Coordination has taken place with the U.S. Environmental Protection Agency (EPA) and the Montana Department of Health and Environmental Sciences (MDHES). There are no sites that are within the alternatives area that are on the EPA's National Priorities List (NPL) or on the EPA inventory of identified hazardous waste sites. In addition there are no sites within the alternatives area that have been identified by the EPA relating to the manufacture, storage, use, treatment, transportation or disposal of hazardous substances/wastes as identified by the Resource Conservation and Recovery Act (RCRA).

A field inventory has been completed to identify sites that have the potential for harboring hazardous wastes (e.g. fuel storage tanks, manufacturing facilities, etc.)

VISUAL RESOURCES

The project area is located approximately one mile northwest of the Yellowstone River in the broad, flat alluvial floodplain of the Yellowstone River Valley. Beyond the Yellowstone River to the south is an area locally known as the South Hills. These hills are moderately vegetated, dark gray Colorado shale rising 200-300 feet above the valley floor. Five miles to the north of the project area, bordering the north edge of the City of Billings is a sandstone bluff approximately 200 feet higher than the adjacent terrain. This feature is locally known as the Rimrocks. Soils in the area are tan to dark brown sandy silts with rounded stones and gravels. Canyon Creek, a perennial tributary of the Yellowstone River, traverses through the area.

Vegetation in the project area is influenced by the intensive agricultural use of most of the adjacent land. Crops consist primarily of corn, beets, alfalfa and grain. Dryland natural grasses occur in areas not utilized for farming. Small numbers of cottonwood and willow trees can be found adjacent to Canyon Creek and irrigation canals.

The visual character of the general area can be described as transitional. Located beyond the western edge of Billings, the once rural area is acquiring a more developed visual character with the development of residential subdivisions and businesses. Other features located in the area defining its visual character include Interstate-90, an existing overpass, the South Frontage Road, local roads, the double-track mainline of Montana Rail Link, numerous billboards and signs, moderate commercial and residential development, numerous above ground utilities and two radio towers (600 ft. and 300 ft.).

The viewer groups effected by the proposed project consist of residents, farm workers,

industrial workers and commuters. The residential and commercial areas that exist occur nearer to Alternates B and C. Alternate D is located in primarily undeveloped agricultural land.

UTILITIES

There are numerous utilities located in the project area that may be affected by the proposed action. These utilities include transmission and distribution facilities discussed below:

- Montana Power Company operates and maintains several electrical lines in the project vicinity.

- Montana-Dakota Utilities Company operates and maintains natural gas distribution facilities concentrated primarily near the existing Shiloh Road overpass.

- Williston-Basin Interstate Pipeline Company operates and maintains a 12" natural gas transmission pipeline located within the railroad right-of-way.

- U.S. Sprint Communications Company operates and maintains fiber-optic telephone lines in the railroad right-of-way.

- U.S. West Communications has telephone facilities in the project area. These facilities include aerial and buried telephone cables.

- Montana Rail Link operates a railroad communication line located within its right-of-way.

Impacts to utilities are discussed in the Environmental Consequences chapter of this document.

POPULATION AND DEMOGRAPHIC IMPACTS

A. POPULATION CHANGES

Construction of an interchange would have little, if any, short-term effects on the population of Yellowstone County and the Billings urban area. Yellowstone County has Montana's largest and most diversified work force and could provide nearly all of the labor necessary to build the project.[27] Even if the project were built completely by non-local workers, the Billings metropolitan area could easily accommodate a temporary immigration of about 200 workers and their families.

Development of the interchange would have little secondary impact on the amount of long-term population growth occurring in the Billings urban area. However, it could induce a more rapid shift in growth towards the west end due to ease of access to the interstate and the improvement of connecting roads associated with the interchange. The Yellowstone County Comprehensive Plan, 1990 predicts substantial new settlement west of Billings irrespective of whether a new interchange is built. This predicted growth will add traffic to the city's congested west-east travel corridors, and will elevate the need for a new interchange to the west of the city. New west end growth, in combination with the interchange would have the cumulative effect of increasing the urbanization of the project area, and thus slightly increasing its population.

B. PROJECT AREA POPULATION EFFECTS

See Relocation Impacts for effects on population, housing, and neighborhoods.

27 Schenkle, Kathy, Labor Analyst, Montana Department of Labor and Industry, Telephone Conversation, April 11, 1991

C. DEMOGRAPHIC CHANGES

Construction and operation of the new interchange would have little effect on demographic characteristics in the Billings urban area or within the study area.

ECONOMIC IMPACTS

A. SHORT-TERM EMPLOYMENT AND INCOME EFFECTS

Project construction would create jobs and earnings for Billings-area residents. Estimates of the income and employment effects by project alternative are presented in Tables 4-1 and 4-2. For the short-term, construction activities would increase county-wide employment by 0.5 percent. Assuming all workers were from the local area, the county unemployment rate would be temporarily lowered by about 0.6 percent. Project construction's economic effects would cause county-wide income to increase by about 0.4 percent.

Table 4-1

Estimated Average Employment
Created by Interchange Construction
Shiloh Road Interchange

	Total Jobs	Direct Jobs	Indirect Jobs	Secondary Jobs
Alternative B	345	138	38	169
Alternative C	318	127	35	156
Alternative D	312	125	35	153

Employment effects were estimated using an economic base model of the Yellowstone County economy.

Table 4-2

Estimated Income Effects of Interchange Construction
Shiloh Road Interchange
(in millions of 1991 $)

	Total Income	Direct Income	Indirect Income	Secondary Income
Alternative B	$ 6.8	3.0	0.8	3.0
Alternative C	6.3	2.8	0.8	2.7
Alternative D	6.2	2.7	0.8	2.7

Income effects were estimated using an economic base model of the Yellowstone County economy.

Direct employment and income estimates include the jobs and earnings of persons employed in interchange construction, frontage road reconstruction, and utility relocation activities. The average employment directly attributable to construction is estimated to range from 125 to 153, depending on the chosen alternative. The actual number of workers on-site would vary during the different stages of project construction. Persons hired would include equipment operators, carpenters, steel workers, cement finishers, truck drivers, welders, laborers, as well as engineers and supervisory personnel. The needed professional, skilled and semi-skilled workers are available in the Billings labor market.[28]

Much of the material, supplies and services necessary to build the interchange are available within the Billings area, creating indirect jobs and income for local residents. Major purchases would include bituminous material, earth fill, concrete, reinforcing steel, gravel, guardrail, signs, paint, and fuel. Assuming 75 percent of materials, supplies, and services are purchased from the Billings area, about $6 million would be spent locally.

The circulation of direct and indirect worker expenditures within the local area would create secondary jobs and income for Billings residents. These "secondary economic effects" would be dispersed broadly through the Billings economy, creating general increases in employment and earnings for persons working for local businesses and government.

Effects on study-area employment would be minimal. Construction of Alternatives B or C would displace one business; the Neibauer Autobody and Paint which has three employees or the Market Basket which has four to five employees. Employees would experience a temporary loss of income during business relocation. Agricultural employment also has a slight impact potential.

28 Schenkle, Kathy, Labor Analyst, Montana Department of Labor and Industry, Telephone Conversation, April 11, 1991

B. LONG-TERM EFFECTS ON THE BILLINGS ECONOMY

The development of a new interchange at or near Shiloh Road would not have a major impact on overall economic growth in the Billings urban area. The primary impact would be an increase in income potential for existing businesses in the study area.

The proposed new interchange has the potential to attract highway-travel oriented businesses in the study area. The new businesses would compete with similar businesses located elsewhere in the Billings area. New businesses also have the potential to contribute to the net growth of the Billings area. However, this secondary impact would be limited to the expenditures attracted by the new businesses.

Direct interstate access also improves an areas attractiveness for industries, warehouses, wholesalers and service businesses. Therefore, a cumulative impact of this proposed project would be the enhancement of Billings competitive position with other cities for new businesses of these types.

C. EFFECTS ON EXISTING LOCAL BUSINESSES

A primary impact of this proposed project is its potential to interfere with access to local businesses in the immediate vicinity. Extended periods of delayed or re-routed traffic would adversely impact the Market Basket, Canyon Creek Gallery, the Family Farm, Oscar's Dreamland and the Billings Nursery. Customer access is particularly important to the Canyon Creek Gallery during the Christmas holiday and summer tourist season. Summertime is the main business period for the Family Farm and Oscar's Dreamland. April through July 4th is the vital business period for the Billings Nursery.

The other existing businesses in the study area are industrial, service and mail-order businesses. The impacts to these would be minor since there is little traffic associated with them.

Secondary impacts from this proposed project on existing local businesses would be economically-related. These are confined to the potential loss of trade during the period of actual construction. These secondary impacts are difficult to gauge in scope, and vary accordingly with the type of business impacted.

The cumulative impacts of this proposed project on these existing businesses would be essentially the combined effects of the disruption in traffic, access, and trade (the potential for minor economic losses). None of these cumulative impacts would be substantial enough to cause a loss, or relocation of any existing business in the study area.

The disruptions caused by this proposed project would be short-term in duration and limited to the period of actual construction activities. In fact the Market Basket may benefit from increased trade due to its proximity to the proposed project's employees. Following completion of this proposed project, the local area businesses would have an increased trade potential due to ease of access to I-90. If the potential for new residential and/or industrial/commercial developments is realized, then this also would benefit these existing businesses. Therefore any temporary disruptions to these businesses during this proposed project's construction would be mitigated in the long term.

In the long-term, retail businesses in vicinity of the interchange could experience growth in sales as a result of increased traffic. The development of new retail businesses would add to the area's commercial diversity, but could also create competition for existing businesses.

For additional business impact discussion, see Relocation Impacts.

D. OTHER ECONOMIC EFFECTS OF NEW RIGHT-OF-WAY

The primary impact of all of this proposed projects "Build" alternatives would be the permanent displacement of agricultural lands. Much of this land is devoted to sugar beet farming, which is one of Montana's highest value crops. Other agricultural land in the Billings area is available for growing sugar beets. However, this proposed project would have the minor cumulative impact of decreasing overall agricultural productivity.

Although the loss of overall agricultural land in the vicinity would be minor, a secondary impact of this proposed project would be to harm the viability of individual farms. Impacts to these individual farms are detailed under the Land Use Impacts sections and Part D. Mitigations, following.

The "Build" alternatives for this proposed project would result in a net growth inhibiting potential for the area's overall agricultural productivity. However, the loss of agricultural productivity will occur regardless of this project because of the existing trend toward conversion to other, more intensive land uses.

Alternative B - Assuming all of the land for this alternative was devoted to sugarbeet production, the project would directly supplant as much as $36,000 in annual crop production. This alternative would also indirectly displace up to $17,000 in annual production by rendering remainder parcels unfarmable. (Estimates are based on 1989 production and prices published by the Montana Department of Agriculture, 1991.)

Alternative C - Alternative C would supplant as much as $31,000 in annual crop production. In addition, Alternative C would indirectly reduce production by up to $12,000.

Alternative D - Alternative D would supplant as much as $49,000 in annual crop production.

E. TAXATION IMPACTS

The primary impact of a new interchange and the relocation of the frontage road would be the removal of taxable property from the area's property tax base. Right-of-way acquisition would displace an estimated $12,800 in taxable property for Alternative B, $12,400 in taxable property for Alternative C, and $9,900 in taxable property for Alternative D (Table 4-3). A secondary impact would be the short-term reduction of annual school and county government property tax revenues by an estimated $4,100 for Alternative B, $3,800 for Alternative C, $2,800 for Alternative D.

F. MITIGATIONS

MDT does not have a program for compensating workers for lost jobs and income caused by business displacement. MDT will compensate eligible property owners of the value of property displaced by highway construction and will pay for the expense of relocating of business property to a new location. The owners of both potentially affected businesses have expressed a desire to continue their business operations at a new location. Therefore, affected employees would probably be provided with an opportunity for continued employment.

The owners of farmland acquired by the highway project would be compensated for the "fair market value" of this property. Determination of the amount of the compensation would consider the lost earnings resulting from deposed agricultural productivity. If physically and economically feasible, irrigation systems affected by the project would be

reconstructed; otherwise landowners would receive compensation payments. Owners would also be reimbursed for the cost of moving personal property located on project land.

Should the affected farmland be cultivated by a lessee, the lessee would be compensated for pre-paid rent and the costs of relocating personal property on the land. The lessee might also receive compensation for planted crops which were precluded being harvested by the project. Lessees could re-allocate supplanted rental payments toward the lease other agricultural land.

Table 4-3

Estimated Reductions in Taxable Valuation
As A Result of Right-of-Way Acquisition
By Project Alternative and Taxing Jurisdiction

Taxing Jurisdiction	Alternative B	Alternative C	Alternative D
Yellowstone County	$12,800	$12,400	$9,900
Billings High School (District 2)	$12,800	$12,400	$9,900
Canyon Creek Elementary School (District 4)	$10,600	$ 6,200	$ 200
Elysian Elementary School (District 23)	$ 2,200	$ 6,200	$9,700

Right-of-way acquisitions would have negligible effects on the overall taxable valuables of Yellowstone County and the Billings High School District, irrespective of the alternative constructed. In the short-term, Canyon Creek Elementary School District 4

would lose 0.5 percent of its taxable value if Alternative B were constructed and 0.3 percent of its taxable value as a result of Alternative C. The Elysian Elementary School District 23 would lose 0.1 percent of its taxable value through development of Alternative C and 0.2 percent as a result of Alternative D.

For the long-term, this proposed interchange would have a strong growth-enhancement potential of new businesses in this area. Development of this potential would more than compensate the county government and schools for the lost property tax revenue due to right-of-way acquisitions.

LAND USE IMPACTS

A. DIRECT IMPACTS

The primary impact from all "Build" alternatives would be the conversion of lands in the proposed project area to urban roadway uses. The "No-Build" alternative would generate no land use impacts.

Alternative D would require the most additional right-of-way as it would utilize less existing right-of-way than the other "Build" alternatives. Table 4-4 shows the estimated amounts of additional right-of-way required for construction of the "Build" alternatives.

TABLE 4-4

Additional Acreage Required for Right-of-Way

Alternative B	59.0
Alternative C	51.1
Alternative D	61.5

Traffic projections show that the further east the interchange is located, the greater total ramp volume on the interchange. As a result Alternative D would have the greatest potential for growth-inducing impacts. Businesses are dependent not only on easy access to arterial roads and the interstate, but on traffic volumes. Therefore a secondary impact of this proposed projects "Build" alternatives would be additional business development.

All "Build" alternatives would convert cropped, prime or important farmland to urban uses. Since lands at the north end of the study area would convert to more intensive land uses, as previously discussed, it is the accelerated rate of conversion that is the primary impact of this proposed project. Some remainder portions of properties would continue in agricultural use, although access to contiguous fields might be disrupted.

The cumulative impact of this conversion would be largely confined to the north study area because it is closest to Billings and because lands in the south study area are zoned for agricultural use and separated from more intensive land uses by Interstate 90.

Alternative B - This alternative would directly convert 50 agricultural acres to roadway use. It would involve the crossing of two irrigation lateral ditches resulting in a potential for temporary disruption of use.

Alternative C - This alternative would directly convert 43 agricultural acres to right-of-way, the least of the three alternatives. It would involve the crossing of three lateral irrigation ditches with a potential for temporary disruption of use.

Alternative D - This alternative would require the largest amount of agricultural conversion; 62 acres would be required for right-of-way. It would require the crossing of one lateral ditch in the south study area, and the Canyon Creek Ditch, north of the interstate (see also Historic and Archaeological Preservation Section).

Coordination has taken place with the Soil Conservation Service (SCS) concerning the loss of this farmland as a result of the proposed action. The SCS coordinates evaluation of projects for compliance with the Farmland Protection Policy Act of 1981 (FPPA). A Farmland Conversion Impact Rating Form (AD-1006) has been completed for this project. A copy of the form is included in Appendix A of this document.

B. INDIRECT IMPACTS

All "Build" alternatives would have growth-inducing impacts in terms of land conversion from agricultural to other land uses. Although growth is slow in the area at present, a new interchange would accelerate this conversion. This would be most evident in the immediate vicinity of the proposed project. Based on the areas setting and the nature of the project, growth will occur in industrial development and travel-oriented commercial businesses.

The primary indirect impact of the "Build" alternatives would be on property values in the study area. These include properties adjacent to the crossroads, and along arterial streets to the proposed interchange. Several studies supplied by the FHWA were reviewed in an attempt to predict the change in property values resulting from the interchange and improvements to local connecting roads. These analyses generally concluded that trying to predict changes in property values is extremely difficult and that no reliable prediction model for such impacts exists. However, some basic assumptions about property value impacts can be made for highway improvement projects: 1) The greatest impact to property values in the area from being located adjacent to or near a highway has already occurred (with the exception of the agricultural properties north of the interstate associated with Alternative D); 2) this proposed project is both a result of

local development and would cause additional development in this vicinity of Billings; and 3) as traffic increases along the project corridor roadways, commercial and industrial property values would benefit while residential and agricultural values would decline slightly.

Alternative B - Alternative B's primary impact would be on local residential neighborhoods. East- and westbound traffic would be routed toward and along Neibauer Road, and therefore toward the Harvest Lane and Esther Rose subdivisions. At the east end of the crossroad, the roadway would be directly adjacent to nine houses, two of which have home occupations associated with them; Town and Country Upholstery and Curt's Complete Lawnmower Service. Residents would experience higher traffic volumes past their homes, associated noise levels and emissions. Three houses and a mobile home in the southern study area would be relocated as a result of this alternative. Another residence would lose most of its front yard. This house is located on the South Frontage Road at Station 72+00. (See also the Relocation, Social, Air Quality and Noise Impact Sections, following.)

There would be secondary impacts to two businesses from Alternative B; Elk River concrete and Flynn Quilt and Frame. These businesses are located on Neibauer Road in the northwest study area. Both businesses would benefit from improved access to the interstate and the arterial road system.

Alternative C - This alternative would have fewer primary impacts on residents, since the proposed travel pattern north of the interstate would be similar to that currently existing. Traffic volumes would increase along Shiloh Road and at the intersections of Shiloh and Neibauer Roads. (See also the Relocation, Social, Air Quality and Noise Impacts Sections following).

Secondary indirect impacts on businesses would be minimal. The Family Farm (Rt. Shiloh Road Sta. 50+00), Flynn Quilt and Frame (Lt. Shiloh Road Sta. 57+00), Elk River Concrete (Rt. Neibauer Road Sta. 12+00), Canyon Creek Gallery (Lt. Shiloh Road Sta. 62+00), and KIDX-KGHL radio station (Rt. Ramp C-3 Sta. 440+00) would experience minor and temporary disruptions in traffic and business patterns.

Alternative D - Alternative D would have the least traffic effects on residential properties. Traffic on the east end of Neibauer Road would actually be reduced since vehicles would be routed to the east. There would also be less use of the Shiloh Road Overpass with Alternative D. Alternative D's primary indirect impact would be to one house that would have its yard reduced substantially (Rt. South Frontage Road Station 72+00). One house along Shiloh Road would experience less traffic passing along Shiloh but would have the crossroad located directly north of it. There would be no impacts to businesses from this alternative. (See also the Relocation, Social, Air Quality and Noise Impacts Sections following).

The primary indirect impact on agricultural lands would be the creation of economically non-farmable areas. All "Build" alternatives have the potential to create these areas. The creation of additional non-farmable areas would result as the previously described potential developments occur. The majority of this activity would be confined to the northerly side of Interstate 90.

Alternative B - Alternative B would indirectly create 23 non-farmable acres from prime farmland. No direct connection to Wise Lane is anticipated for this alternative and growth-inducing impacts for the remaining land uses would be minimal. This would be a major factor in retaining agricultural land use south of I-90. The area of non-farmable land for Alternative B is shown on Figure 4-1.

Alternative C - This alternative would indirectly impact 16 acres of agricultural land. This alternative would involve the connection of Wise Lane to the interchange, increasing the potential for strip development to the south. This would cause secondary impacts on agricultural lands in this area, and would cumulatively result in a greater net loss of farmland when compared to other "Build" alternatives. The indirectly impacted farmland is shown on Figure 4-2.

Alternative D - Alternative D's primary indirect impact will be the creation of 1 acre non-farmable "island" west of the Shiloh Road connector. A secondary impact would be the disruption of irrigating and farming 133 acres of adjacent farmland. The areas of primary and secondary indirect impacts are shown on Figure 4-3.

C. CUMULATIVE IMPACTS

Three types of cumulative impacts would result from this proposed project regardless of which "Build" alternative is selected. The development of the ZooMontana site in close proximity to this proposed project intensifies the potential for commercial and industrial growth within and adjacent to the study area. This site's development is proceeding independent of this proposed interchange's construction. ZooMontana's development affects traffic on urban arterials and roadways in this proposed project's area.

The second cumulative impact would be the conversion of prime and important farmland in the county. The maximum amount of this farmland represents approximately 0.05% of the total agricultural acreage within Yellowstone County. However, this doesn't include conversions due to future industrial/commercial/residential developments that occur as a result of this proposed project's completion.

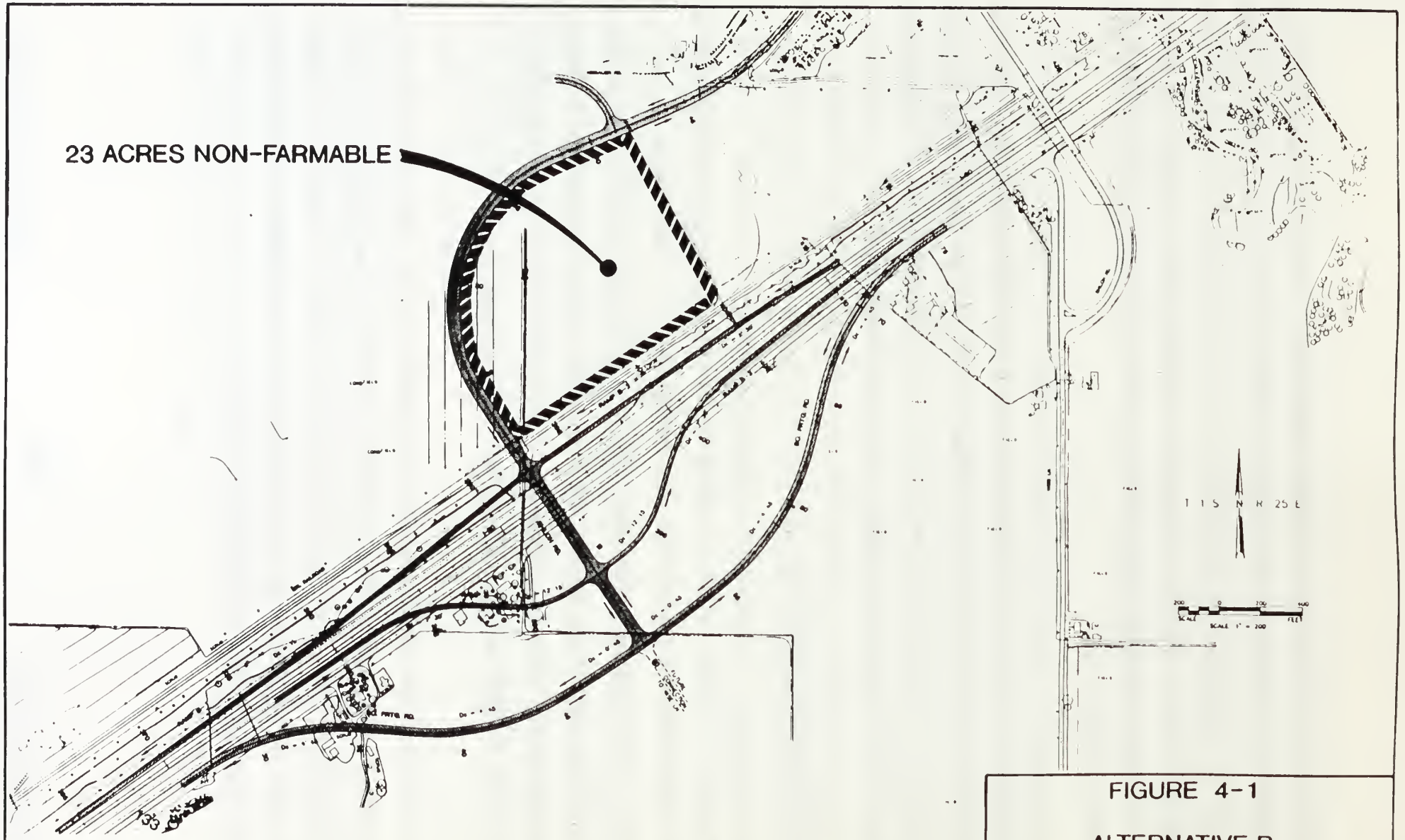


FIGURE 4-1

ALTERNATIVE B

INDIRECT FARMLAND IMPACTS

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

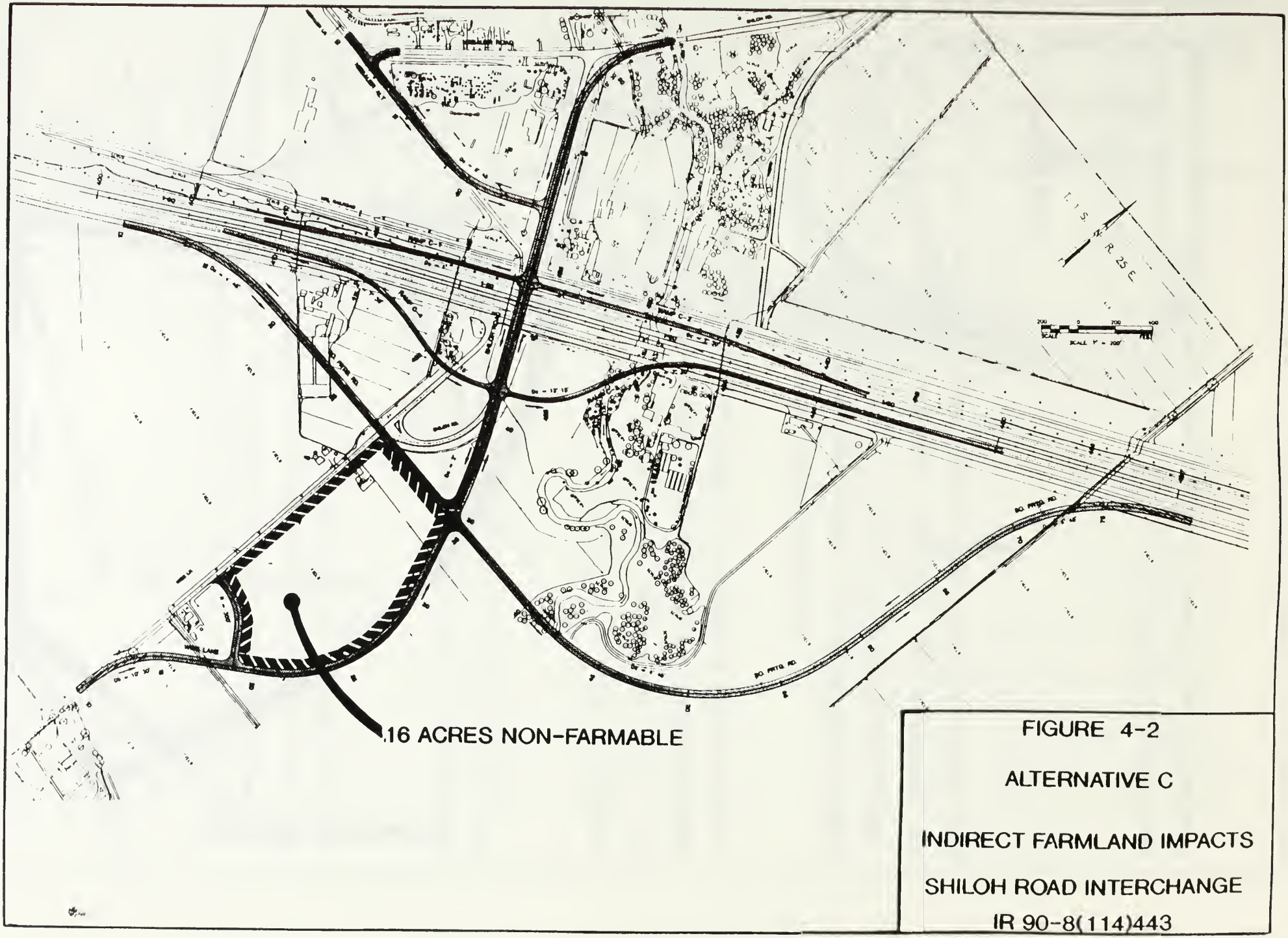


FIGURE 4-2

ALTERNATIVE C

INDIRECT FARMLAND IMPACTS

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

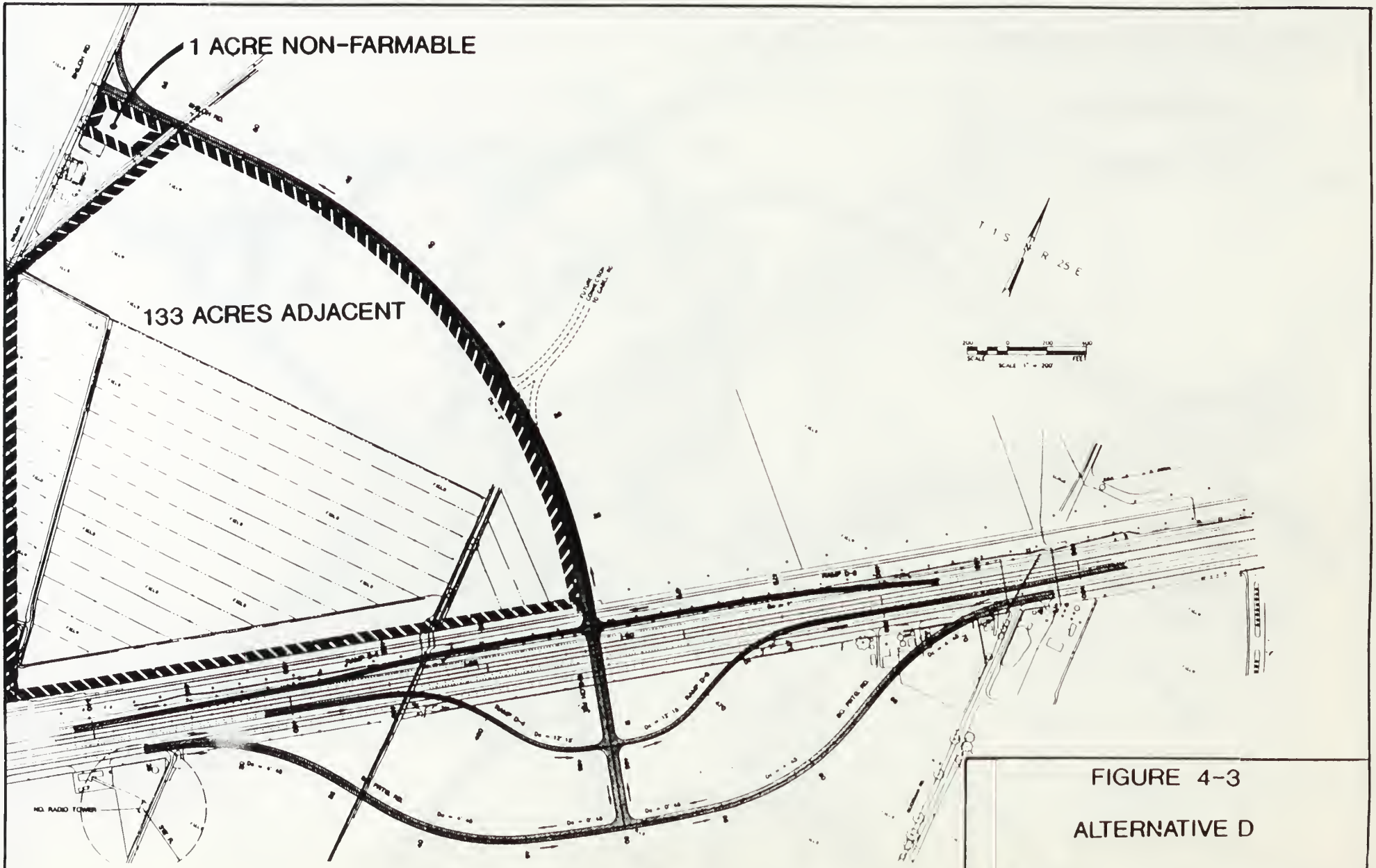


FIGURE 4-3

ALTERNATIVE D

INDIRECT FARMLAND IMPACTS

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

The third cumulative impact would be from the increased potential for development along the South Frontage Road. This would result if and when the current agricultural zoning to this route is changed.

D. MITIGATIONS

The 1990 County Comprehensive Plan contains policies aimed at preventing traffic impacts from new commercial developments, preventing strip development, and protecting agricultural lands. If these policies are effectively carried out, they will go a long way towards mitigating traffic and related impacts. MDT has no direct or implied jurisdictional authority to enforce County Comprehensive Plans.

The Yellowstone Board of County Commissioners has proposed a land use study and attendant land use regulations around the approved interchange site to ensure that future development is consistent with the comprehensive plan, and is of good quality. This planning process would give residents another opportunity to participate in shaping the character of their area.

Alternative B allows for a future connecting road extending $0.5\pm$ miles southeasterly to Wise Lane. Growth-inducing potential for more intensive land use in this area will be reduced if this connecting road is not constructed.

Affected landowners have been apprised of this proposed project through the Scoping Process. Contacts will be maintained through the Public Hearing Process, and in the design stages for specific cases. The manager of the property affected by Alternative D has discussed design modifications that would minimize impacts on farming this parcel.

Additional mitigation measures would include scheduling construction to avoid disruption to irrigation ditches at critical periods and to other agricultural practices. This type of mitigation would also apply to businesses; minimizing traffic disruptions during peak business periods and providing alternative access when necessary.

RELOCATION IMPACTS

A. DIRECT IMPACTS

Relocation impacts were derived from preliminary right-of-way plans submitted for each alternative and from MDT relocation studies.[29]

All of the "Build" alternatives primary impacts would involve the relocation of structures and signs. Alternative D would have the least relocation impacts and the lowest right-of-way costs. Alternative C would have the highest right-of-way costs, and Alternative B involves the most relocation impacts.

Alternative B - This alternative would displace three households and one business. Storage at Elk River Concrete would be reduced, and the storage yard bisected by the crossroad connection to the north. This storage is important to the concrete plant's operation during periods of high production. Should the project indirectly reduce the utility of the storage area, Elk River might need to relocate its plant.[30] Total right-of-way costs for this alternate are estimated at $523,700.

29 Wenger, Richard E., 1991. Relocation Studies: Project No. IR 90-8(114)443 Plans B, C (Option 2) and D Shiloh Road Interchange. Montana Department of Highways

30 Gatner, Bob, Business Owner, Elk River Concrete, Telephone Conversation, March 26, 1991

Alternative C - This alternative would displace two residences and the Market Basket Grocery. The storage yard for Flynn Quilt and Frame Company would be reduced and bisected by the connection to Neibauer Road. This alternative would also require a small amount of land in the northwest corner of the Billings Nursery property; however, this would not substantially affect business operation. Three off-premise commercial signs would also be relocated. Total right-of-way costs for this alternative are estimated at $658,600.

Alternative D - Alternative D would require removal of one house and agricultural outbuildings with no affect on businesses. Three off-premise commercial signs would be relocated. Right-of-way costs are estimated at $493,400.

Residential relocations are estimated to affect between two and seven local residents, depending on the alternative chosen. Alternative B would require the greatest number of residents to relocate and Alternative D the least.

There are no neighborhoods, public facilities, non-profit organizations, nor known families of special composition that would be directly or indirectly affected by any of the alternatives.

B. INDIRECT IMPACTS

Indirectly affected properties would not be primarily impacted by relocations from this proposed project. However, these properties would have some portion of a yard, parking, or storage used by a proposed alternative. All "Build" alternatives would have some indirect impacts including the secondary impacts of reducing the value of these properties.

Alternative B - Construction of this alternative would involve the taking of front yard from one farmstead, leaving the house in much closer proximity to the roadway. The property in question is located south of the Frontage Road (Station 72+00). Approximately 0.3 acres of right-of-way would be required in this location. The farm buildings occupy approximately 3 acres.

Alternative C - Approximately 0.3 acres of land would be required from the front of a nursery operation (total parcel approximately 9 acres) located south of Ramp C-3 Station 431+00 for the construction of Alternative C.

Alternative D - The front yard of a house located south of Frontage Road Station 72+00 would be substantially reduced by needed right-of-way. Acquiring 0.1 acre from the 0.4 acre property would result in the house being located much closer to the frontage road.

C. AVAILABILITY OF REPLACEMENT HOUSING AND BUSINESS PROPERTY

Preliminary housing data from the 1990 Census was released in the fall of 1991. The Census report STF 1A provides information on occupied and vacant housing in Yellowstone County, the City of Billings, and the City of Laurel. Housing information for smaller subdivisions has not yet been released. The Census information demonstrates that there is substantial amount of vacant housing in the county and in Billings and Laurel.

No more than one business would be relocated by the proposed project regardless of the "Build" alternative chosen, and Alternative D would not displace any businesses. The other two "Build" alternatives would displace either an auto body and paint shop or a convenience store. There is a substantial amount of available land in the study area with appropriate zoning for either of these businesses.

Table 4-5

Housing Occupancy Characteristics

Yellowstone County, Billings and Laurel, 1990

	TOTAL UNITS	OCCUPIED UNITS	VACANT UNITS	VACANCY RATE
Yellowstone County	48,781	44,689	4,092	8.4%
City of Billings	35,964	33,181	2,783	7.7%
City of Laurel	2,596	2,262	334	12.9%

Source: U.S. Department of Commerce. 1991. Bureau of the Census, Washington, D.C. 1990 Census of Population, Montana, Table STF 1A.

D. RELOCATION ASSISTANCE

The primary impact of this action would be to provide assistance for the displaced businesses and residents that have been previously described. In general, persons whose residence or place of business is acquired in conjunction with the project would be eligible for relocation assistance. The eligibility requirements are complex and not presented here but are available from MDT Right-of-way Bureau.

A Relocation Plan and appraisals of affected properties is being prepared by MDT. The plan will address effects on businesses. Affected business owners would be eligible for relocation assistance from MDT. Construction would not begin before adequate housing had been provided for all displaced persons.[31]

Residents displaced by this proposed project would be eligible for replacement housing payments. Displacees would not be required to relocate to similar housing and have other options depending upon their ownership status, length of occupancy at the time of acquisition and other eligibility requirements. MDT has the responsibility to make available a comparable replacement dwelling and relocate the displaced person to their original ownership status if requested. In the remote case that housing would not be available at the time of relocation, the MDT is committed to finding "housing of last resort".

MDT's Relocation Assistance Program requires a 90-day notice to residents and landowners displaced by the proposed action. Supplemental housing payments, interest differential payments, moving expenses, replacement housing advisory assistance, and incidental expense payments would be available to displacees. These payments would be in addition to compensation paid for new right-of-way. Rent supplement payments and advisory services are also available to qualified tenants displaced by the project.

If the displacee feels that the offered relocation assistance is inadequate, an appeal may be filed with the director of MDT. If MDT and the landowner did not agree on the adequacy of compensation, a condemnation proceeding would be initiated to determine the adequacy of compensation.

31 Horton, John, Negotiation Section Supervisor, MDOH, Telephone Conversation, March 25, 1991

The acquisition and relocation program for the proposed action would be conducted in accordance with the Uniform Relocation Assistance And Real Property Policies Act of 1970, as amended. Relocation assistance and other resources are available to all residential and businesses without discrimination.

MDT will discuss relocation assistance and provide informational pamphlets about the program at the public hearing on the EIS. A presentation describing the relocation assistance available to displacees will also be made during the combined design and location hearing for the proposed project.

There would be few, if any, secondary cumulative and/or growth-inducing impacts resulting from relocations associated with this proposed project. This is due to the small number of possible relocations as compared to the wide availability of housing and business sites. It is also unlikely that there would be impacts to property values, schools, or employment as a result of these relocations.

SOCIAL IMPACTS

A. DIRECT IMPACTS

The primary social impact of this proposed project would be to change the area from a rural to an urban setting. The greatest change, in effect, has already occurred due to the area's close proximity to Billings, and the existing I-90/rail corridor. No neighborhoods would be split, although individual properties would be depending on which of the three "Build" alternatives is used. There would be no substantial effects to social cohesion, and no impacts on minority populations.

Individual effects would be more acute. It is estimated that between two and seven residents would have to be relocated depending on each of the three "Build" alternatives. Those residents that have lived in the area for several years will have strong attachments to both it and their homes, or farmsteads.

Short-term disruptions to local traffic patterns would occur with any of the three "Build" alternatives. Depending on which of these three alternatives is studied, these disruptions would temporarily affect school bus routes and stops, access to Canyon Creek School to the east, and emergency services to a minor degree. The Shiloh Road overpass would remain open during construction regardless of the alternative chosen. Ultimately traffic safety would be enhanced by design improvements to the local street pattern. Wider paved shoulders also improve safety for pedestrians and bicyclists on these routes. Alternatives B and C would delay turning movements at Flynn Quilt and Frame, Elk River Concrete, Canyon Creek Gallery, and the Family Farm. This is due to the increased traffic on the crossroad access to these properties, and only applies to left turns at the latter two sites.

B. INDIRECT IMPACTS

The secondary effects of this proposed project would include increased commercial and industrial uses in the immediate project area in the long-term. This would further change the semi-rural character of the area, especially along the South Frontage Road and Wise Lane if a south connector is advanced. Residents, especially in unzoned areas, would live with conflicting land uses on nearby properties.

Commercially-zoned properties would primarily benefit from improved access under the three "Build" alternatives. ZooMontana would also be a primary beneficiary due to its close proximity to I-90. Increased traffic would pass this and other sites in the area. (See also the Land Use Impacts and Visual Resources Sections).

The improvement of arterial and connector roads associated with the potential interchange locations, such as Gabel and/or Neibauer Rds. would provide more convenient travel for west-side travelers and residents. This in turn would increase the potential for growth along connecting roads due to ease of access to I-90. Any improvements to these roads and streets, however, would be the County's responsibility.

C. CUMULATIVE EFFECTS

New growth in the proposed project area would increase population, which might in turn create a demand for more private and public services and facilities, such as schools.

D. MITIGATIONS

Coordination with impacted school districts would ensure that construction activities cause the least disruption possible to school bus routes and stops. Alternative D would have no impact on these as there are no bus routes or stops at this location.

The Relocation Assistance Program would mitigate some of the social impacts by assisting residents with the financial and logistical burdens of moving and attaining housing.

The short-term traffic disruptions created by the "Build" alternatives would be mitigated by improvements to the overall traffic movements upon completion of this proposed project. This applies to traffic within the immediate area, and the west end of Billings.

AIR QUALITY IMPACTS

The proposed action has been identified in the 1990 Transportation Plan for Billings and is included in the 1991-1995 Transportation Improvement Program (TIP). The projects included in the TIP have been reviewed by Yellowstone County Air Pollution Control and are consistent with the Transportation Control Plan.

A temporary increase in air pollution due to dust and fumes would occur with construction of any of the "Build" alternatives. The contractor would be required to adhere to all federal, state and local regulations to minimize this pollution.

The primary air quality impacts after construction would consist mainly of exhaust emissions from motor vehicles. These exhaust emissions are a major source of carbon monoxide (CO). A simplified analysis has been completed to estimate CO concentrations associated with each of the "Build" alternatives and the "No-Build" alternative. The analysis utilized a graphical procedure based on the computerized CALINE 3 line source air quality model developed by the California Department of Transportation. Composite vehicle emission factors were obtained from the FHWA Technical Advisory T6640.11 (MOBILE 4).

In performing the analysis, distances from the proposed roadway to receptors (residences and businesses) were measured. For purposes of evaluating each alternative, the following distances from roadway elements to receptors were used:

Crossroad	30 meters
South Frontage Road	24 meters
Interstate 90	45 meters

The analysis shows that the "Build" alternatives will result in CO concentrations well below the Federal and State 1-hour Standards (35 ppm and 23 ppm). With the worst 1-hour concentrations being significantly below 9 ppm, the 8-hour standard of 9 ppm will not be violated. Table 4-6 indicates predicted 1-hour CO concentrations for each of the "Build" alternatives and the "No-Build".

TABLE 4-6

PREDICTED 1-HOUR CO CONCENTRATIONS (PPM)

	ALT. B		ALT. C		ALT. D		NO-BUILD	
	1993	2013	1993	2013	1993	2013	1993	2013
Crossroad	0.3	0.3	0.5	0.5	0.5	0.4	0.2	0.2
S. Frontage Road	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3
I-90	0.7	0.5	0.7	0.5	0.6	0.6	0.6	0.6

When consulted about the proposed project, MDHES identified Carbon Monoxide (CO) levels in two areas of Billings as a concern. MDHES comments are included in Appendix A of this document. Traffic studies have been completed in the form of the 1990 Transportation Plan and the traffic analysis performed for this project. The traffic studies indicate that the proposed action will have no negative impact on air quality in the areas identified as areas of concern by MDHES. The proposed project is beyond the limits of the area defined as non-attainment for CO.

The central business district and the King Avenue/24th Street West area are located within the area defined as non-attainment for CO. The proposed action will not increase traffic in the central business district. The proposed action will provide alternative travel paths for a portion of the traffic in the King Avenue West/24th Street West area that currently uses the West Billings Interchange. The construction of any of the "Build" alternatives would have a beneficial impact on air quality in the 24th Street West area.

The "No-Build" option would have little effect on air quality in the immediate project area or the central business district.

Secondary air quality impacts would be related to future developments induced by construction of the proposed interchange. Any future developments would be subject to applicable federal, state, and local regulations and permitting requirements.

No adverse cumulative impacts to air quality would result from the proposed action. The project would benefit air quality by relieving traffic congestion and providing a more efficient transportation system.

NOISE IMPACTS

A noise analysis has been completed for the proposed action. The analysis includes traffic noise levels for 1990 and projected noise levels for the design year (2013). Design year noise levels were calculated using a design hourly volume equal to 10% of the year 2013 AADT. The percentage of trucks used in the analysis varied depending on the particular roadway and alternative affecting each site location. Truck percentages for both the present peak hour and design hour volumes were based on existing traffic counts for South Frontage Road, Shiloh Road and I-90. Traffic speeds were based on existing

posted speed limits. Noise levels for the design year were calculated using the FHWA Noise Prediction Model. Ambient noise level measurements were taken in the vicinity of each of the proposed alternatives and used to calibrate the values generated by the computer model.

23 CFR 772 defines noise impacts as occurring when the future traffic noise levels substantially exceed the existing noise levels (an increase of 10 dBA or greater) or when the Noise Abatement Criteria (NAC) are approached (one decibel less than the stated NAC) or exceeded. The NAC for Category A is Leq(h) = 57 dBA. Category A includes lands on which serenity and quiet are of extraordinary importance and serve an important public need. The NAC for Category B, which includes schools, residences, motels, churches, public meeting facilities, is Leq(h) = 67 dBA. The NAC for Category C, which includes developed lands and properties not included in Category A or B, is Leq(h) = 72 dBA. A change in noise levels of 2 dBA is barely perceptible to the human ear; a change of 3-4 dBA will result if the amount of traffic or distance to the source is doubled or halved; an increase of 10 dBA is perceived as being twice as loud.

A summary of the present and projected noise levels at each site location is shown in Table 4-7. The sites are grouped by the corresponding alternative. The table summarizes levels for existing, design year build alternatives and the design year "No-Build" condition. The locations of the sites are shown on Figure 3-4 in Affected Environment Chapter.

"No-Build" Alternative

Traffic noise levels will increase from 0-5 dBA (depending on site) over existing peak levels by the year 2013. The average increase will be approximately 2 dBA. This is based on projected traffic growth with no change in existing roadway alignment.

Alternative B

At Site No. 1 the projected design year noise level is the same as the "No-Build" level due to relocation of the frontage road. Although existing and projected noise levels at this site exceed the NAC - Category B level, there would not be additional impact.

Site No. 2 is a residence located north of Neibauer Road and west of Shiloh Road. Projected traffic volume increases with Alternative B construction would result in an increase of 15 dBA over existing peak hour noise levels along this portion of the connector route. Although less than the NAC Category B level, this can be considered a substantial increase according to FHPM 7-7-3 criteria. Impacts farther north along Shiloh Road in the vicinity of Sites No. 7 and No.8 (See Alt. C and D) will be less than those near Neibauer Road because traffic volumes are presently much higher on Shiloh and will not increase by as large a percentage, although Site No. 7 will increase by approximately 10 dBA and both Sites No. 7 an No. 8 will approach or exceed the NAC 67 (Category B) dBA level.

Alternative C

The proposed realignment of the frontage road and the addition of access ramps would eliminate much of the residential and commercial development south of the existing overpass. Site Nos. 3, 4, and 5 would experience noise level increases from 3-6 dBA with construction of Alternative C. Design year noise levels at these three sites would not exceed the NAC (Category B) levels.

Table 4-7
Existing and Projected Noise Levels

Alternative/ Site No.	Location Description	Existing Peak Hour Leq(h) dBA	Design Year "No Build" Leq(h) dBA	Design Year "Build" Leq(h) dBA
Alternative B 1	Residence, south of frontage road	68	69	69
2	Residence; north of Neibauer Road	50	51	65
Alternative C 3	Residence; south of I-90, west of Wise Lane	55	58	54
4	Residence; south of I-90, west of Wise Lane	54	57	60
5	Residence; south of I-90, east of Wise Lane	55	57	63
6	Residence; north of I-90, east of Shiloh Road	64	64	67
7	Gallery; north of I-90, west of Shiloh Road	57	62	67
8	Residence; north of I-90, east of Shiloh Road	62	64	69
Alternative D 8	Residence; north of I-90, east of Shiloh Road	62	64	67
9	Radio station; south of frontage road	70	72	73
10	Site; south of frontage road	70	72	72
11	Site; north of Gabel Road	50	50	59

Site No. 6 is located just northeast of the existing overpass. The berm formed by the overpass and approach provides shielding at this site from at least half of the Shiloh Road traffic and all of the I-90 traffic west of the overpass. The addition of the westbound off-ramp would increase noise levels at this location by approximately 3 dBA. Design year noise levels are projected to be at the NAC Category B level of 67 dBA.

Site No. 7 is located near the Shiloh - Neibauer Road intersection and Site No. 8 is located approximately one-quarter mile farther north on Shiloh Road. Projected Alternative C design year traffic volumes would increase noise levels substantially from 7-10 dBA at these sites and both would be at or above the NAC (Category B) 67 dBA level.

Alternative D

Noise levels at Site No. 8 would be 3 dBA higher than the design year "No-Build" alternative but slightly lower than this same site with the construction of Alternative C. Design year noise levels are projected to be at the NAC Category B level of 67 dBA.

Site No. 9 is a radio station located south of I-90 and the frontage road. The building currently houses transmitting equipment for the facility. Business and studio operations are conducted at another office location not affected by this project. Noise levels at this location would increase approximately 3 dBA over the existing levels and would slightly exceed the NAC Category C levels of 72 dBA.

Site No. 10 is presently undeveloped. Analysis at Site No. 10 indicates that design year noise levels would vary with the distance from the proposed frontage road location. Projected noise levels for design year volumes would be 73 dBA at a distance 75 feet from centerline; 70 dBA at 150 feet and 67 dBA at 300 feet from centerline.

Site No. 11 is an undeveloped site located in an area north of I-90 and Gabel Road and west of South 32nd Street. At present, Gabel Road does not extend west of 32nd Street and existing peak hour and design year "No-Build" noise levels would be the same (approx. 50 dBA). With construction of Alternative D, the design year noise levels would increase by approximately 9 dBA. This projected increase would be for development occurring 150 feet from centerline.

Alternative D would have the least noise impact of the build alternatives being considered, mainly due to the lack of existing development in the vicinity of the proposed alignment. Shiloh Road, which serves as the primary connector from the north, would experience increased noise levels at or slightly above the FHPM 7-7-3 Noise Abatement Criteria (Category B) for distances from centerline 100 feet or less. Noise level increases as a result of Alternative D are not considered to be substantial.

The primary, secondary, and cumulative noise impacts would be caused by existing and future traffic levels. The noise levels shown on Table 4-7 do not indicate any substantial impacts that affect the growth-enhancement potential of this proposed project as described under the preceding Economic and Land Use Impacts Sections.

A. MITIGATIONS

Mitigation of noise impacts is typically achieved through construction of noise barriers. In order for noise barriers to be effective, they must be long enough and high enough to shield the site from the roadway. At the impacted sites, the noise barriers would have to accommodate access requiring openings in the barriers. These access openings would severely reduce the barriers' effectiveness. Therefore, the use of noise barriers on this project is not considered practicable.

Proposed mitigation of noise impacts of the "Build" alternative consists of planning to mitigate future impacts. Future impacts can be mitigated by controlling the development of land adjacent to the interchange to ensure that future development maintains the balance of increased noise levels with planned land use. The proposed mitigation is compatible with the Yellowstone Board of County Commissioners recommendation to undertake a special planning project for land use in the vicinity of a future interchange.

WATER QUALITY IMPACTS

The primary water quality impacts for any of the "Build" alternatives would be very minor and short-term construction related. The potential for erosion would be minimized by revegetating and mulching exposed slopes as soon as practical following construction. Minor channel modifications would be required for inlet and outlet channels, culvert excavation, placement of bedding, riprap and alignment of new drainage and irrigation facilities. All work would be in accordance with Section 319 of the Water Quality Act of 1987 (P.L. 100-4). Additional primary water quality impacts would result from non-point sources such as roadway runoff. The control of water pollution for both specific and non-point sources is described in Section 402 of the National Pollution Discharge and Environmental Systems (P.L. 92-500). This proposed project would also be in compliance with both the Montana Water Quality Act for Section 3(a) authorizations, and the Montana Stream Protection Act (MCA 87-5-501 through 509 inclusive). The Department of Natural Resources and Conservation has provided comments regarding water quality and irrigation facilities. A copy of these comments is included in Appendix A of this document.

The Yellowstone River and the Billings Bench Water Association (BBWA) irrigation canal lie beyond the limits of any of the "Build" alternatives and would not be directly affected by the proposed action.

Canyon Creek would not be impacted by "Build" Alternatives B or D. Alternative C would require construction of three new bridges over Canyon Creek. These bridges would accommodate two interstate access ramps and the frontage road. No channel modifications of Canyon Creek would be required with the construction of the new bridges.

The Canyon Creek irrigation ditch would not be affected by "Build" Alternatives B or C. Alternative D would require a crossing of the irrigation ditch by the crossroad. This crossing would be constructed during the non-irrigation season or temporary facilities would be required to provide for flow of irrigation water. In either case, irrigation system modification would be coordinated with and have prior approval of the irrigation facility owners.

Groundwater in the project area would not be impacted by any of the "Build" alternatives as no excavations would be deep enough to encounter groundwater.

The "No-Build" alternative would have no adverse impacts to water quality in the project vicinity.

Secondary water quality impacts would be associated with future development in the area. Future development would be subject to applicable regulations and permitting requirements concerning the impacts to surface and groundwater.

There would be no adverse cumulative impacts to water quality in the area from this proposed project. There would also be no adverse water impacts on the growth-inducing potential of this proposed project as described under the preceding Economic and Land Use Impacts Sections.

PERMITS

Construction of any of the "Build" alternatives would require permits from various Federal and State Agencies. These permits include:

- Air Quality Permits from the State Air Quality Bureau would be required for the operation of asphalt plants and crushers.

- A Section 3(a) Authorization would be required from the State Water Quality Bureau allowing temporary increases in water turbidity.

- A permit would be required in accordance with Section 404 of the Clean Water Act if the construction would result in placement of dredged or fill material into waters of the United States. This permit would be obtained from the U.S. Army - Corps of Engineers in their Omaha District.

- A floodplain development permit would be required for construction of any of the build alternatives within the 100 year floodplain of Canyon Creek. These permits are issued by the County office of the Federal Emergency Management Agency.

WETLAND IMPACTS

Executive Order 11990, "Protection of Wetlands", established a national policy to avoid, to the extent possible, the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

None of the project alternatives have any impact on the identified wetland sites. The proposed frontage road location for Alternative C passes southerly of wetland Site No. 7.

FLOODPLAIN IMPACTS

The construction limits of "Build" alternatives B and D do not encroach into any delineated floodplain. The "No-Build" alternative would avoid any floodplain impacts. Alternative C would involve three transverse crossings of the Canyon Creek floodplain (Figure 4-4) and therefore be subject to the provisions of Executive Order 11988, Floodplain Management. This order requires Federal agencies to avoid, to the extent practicable, the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Primary floodplain impacts associated with this proposed project would be minor. Hydraulic designs of the transverse crossings associated with Alternative C would ensure that the new crossings would not add to any existing flooding potential. The proposed project would be in compliance with Yellowstone County floodplain development regulations. The proposed project would not encroach on any existing regulatory floodway, nor would it support additional future floodplain development.

There would be no secondary impacts associated with flooding adjacent properties. The cumulative floodplain impacts from the "Build" alternatives would be very minor in nature and confined to the existing delineated floodplain boundaries. This proposed project would not support additional floodplain development since this will be governed under the existing floodplain regulations. Therefore, the potential growth-inducing impacts resulting from this proposed project's completion would be excluded from the Canyon Creek floodplain.

WATER BODY MODIFICATION AND WILDLIFE IMPACTS

Potential water body modification of the "Build" alternatives is discussed in the Water Quality Impacts section of this chapter. Figures 2-14 and 4-4 show the locations of potential water body modification impacts for this proposed project.

Alternatives B and D occur in areas that have been subjected to residential and commercial development or have been intensively farmed and therefore provide little wildlife habitat. Because of existing land uses and development at and adjacent to the Alternative B and D locations, construction of the interchange at either location would have no impact on wildlife. This "No-Build" alternative would have no primary, secondary or cumulative impacts on fish or wildlife habitat.

The undeveloped riparian corridor along Canyon Creek offers the only habitat for year-round food and cover in the immediate area. Land adjacent to the corridor has been developed and offers little habitat. Construction of an interchange at the Alternative C location would have a minor impact on the corridor requiring three additional crossings of Canyon Creek. Two of the three crossings would be adjacent to existing crossings and disturb very little additional area. The third crossing would be a new crossing for the 40 ft. wide South Frontage Road approximately 1500 feet southeasterly (downstream) of I-90. As with the Alternatives B and D locations, construction of an interchange at the Alternative C location would have no primary impact on wildlife.[32]

The fishery value of Canyon Creek, the only active stream in the immediate project vicinity, is low due to the influence of existing developments including irrigation wastewater. Therefore, none of the "Build" alternatives would have any primary, secondary or cumulative impacts on fishery values or on the fish populations in the proposed project's area.

32 ECON, Inc. 1989. Wetland Evaluation and Biological Assessment for Montana Department of Highways Project IR 90-8(114)443 Shiloh Road Interchange

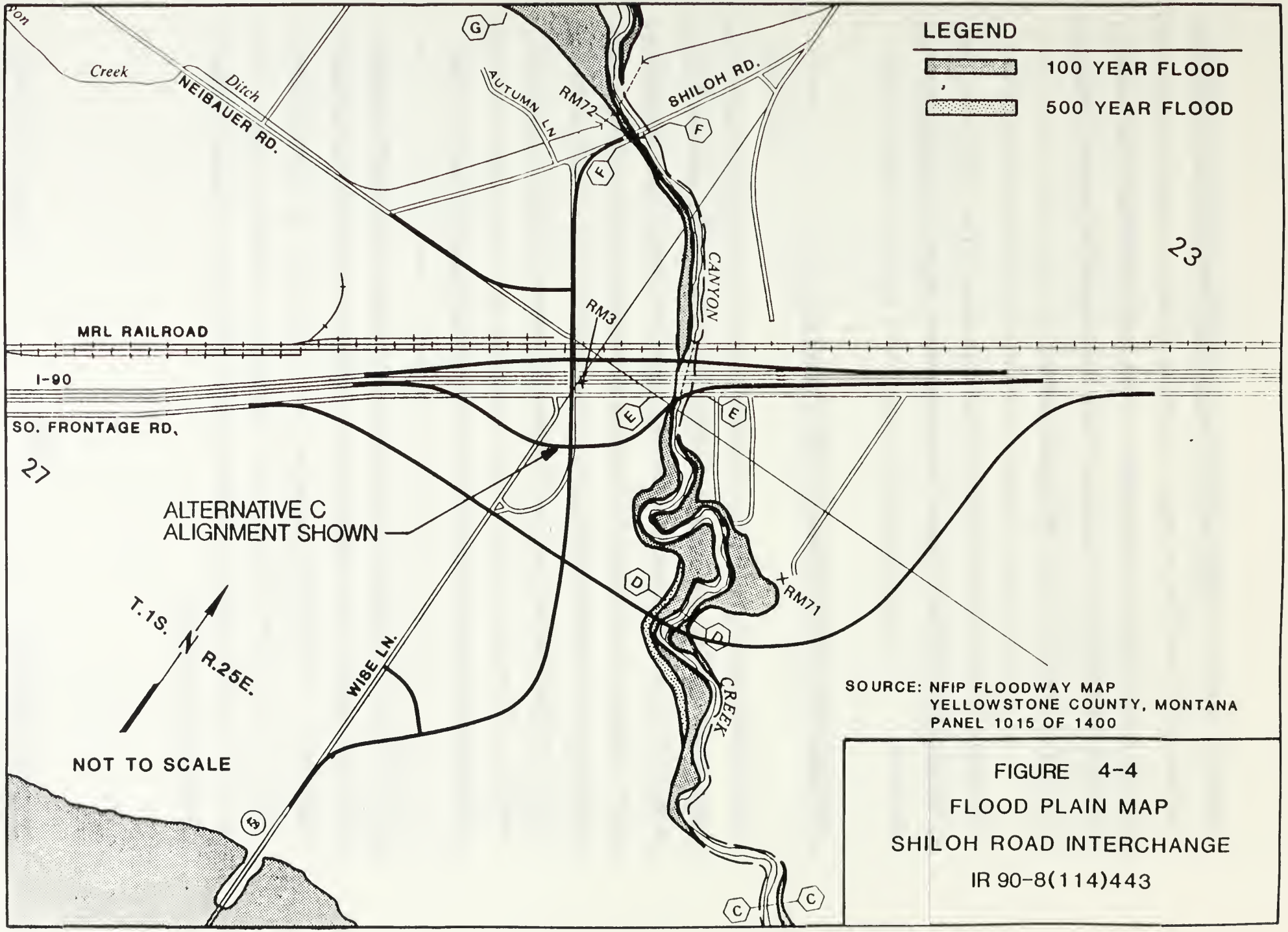


FIGURE 4-4

FLOOD PLAIN MAP

SHILOH ROAD INTERCHANGE

IR 90-8(114)443

Secondary impacts on wildlife resulting from growth induced potentials caused by this proposed project would be very minor. No adverse cumulative impacts on wildlife would occur as a result of the proposed action. Any future growth-induced impacts resulting from this proposed project would occur in areas that have been subjected to development or intensive farming and offer little wildlife habitat.

Coordination has taken place with the Montana Department of Fish, Wildlife and Parks state and regional offices. Copies of corespondence are included in Appendix A of this document.

THREATENED OR ENDANGERED SPECIES IMPACTS

This proposed project has no primary impacts to Threatened or Endangered species in the area. A secondary impact to bald eagles and peregrine falcons is the electrocution hazard potential from overhead power lines. In areas where the safety of raptors is determined to be a major concern, the company controlling the power line shall be required to raptor proof any power line that is to be moved as a result of the project. The power lines of concern are those that carry between 12,000 and 69,000 volts and have a separation of conductors of less than 60 inches. Upon request, the MDT Environmental Unit shall provide the necessary information and instruction for raptor proofing the power lines.

The USFWS does not identify any project related cumulative impacts to Threatened or Endangered Species in their letters of July 13, 1989 and November 18, 1991 included in Appendix A. The Biological Assessment also concludes that the project would not jeopardize the continued existence of any Threatened or Endangered Species. There would be no growth enhancing related impacts on Threatened or Endangered Species identified in either source.

HISTORIC AND ARCHAEOLOGICAL PRESERVATION

Only one site in the project area has been determined to be eligible for listing on the National Register of Historic Places (NRHP). Site No. 24YL891, the Canyon Creek Ditch, is an irrigation ditch that traverses through the area. The Canyon Creek Ditch is crossed numerous times by driveways and roadways including Shiloh Road.

Alternative D would require that an additional crossing of the ditch be constructed. The existing location of the ditch would remain unchanged (Figure 4-5).

Alternatives B, C and the "No-Build" alternative would have no impact on the Canyon Creek Ditch.

The State Historic Preservation Office (SHPO) has been consulted regarding the crossing of the ditch by the Alternative D alignment. On June 3, 1991 SHPO concurred that this proposed project has no effect on the Canyon Creek Ditch's NRHP eligibility. A copy of MDT's May 16, 1991 letter requesting this concurrence is included in Appendix A of this document. SHPO's concurrence is noted by their stamp on MDT's letter of request.

If other historic or archaeological resources are discovered during construction, measures would be taken to protect such resources in accordance with Montana Department of Highways Standard Specifications. These measures include special provisions requiring the project's contractor to notify and receive clearance from SHPO prior to beginning construction.

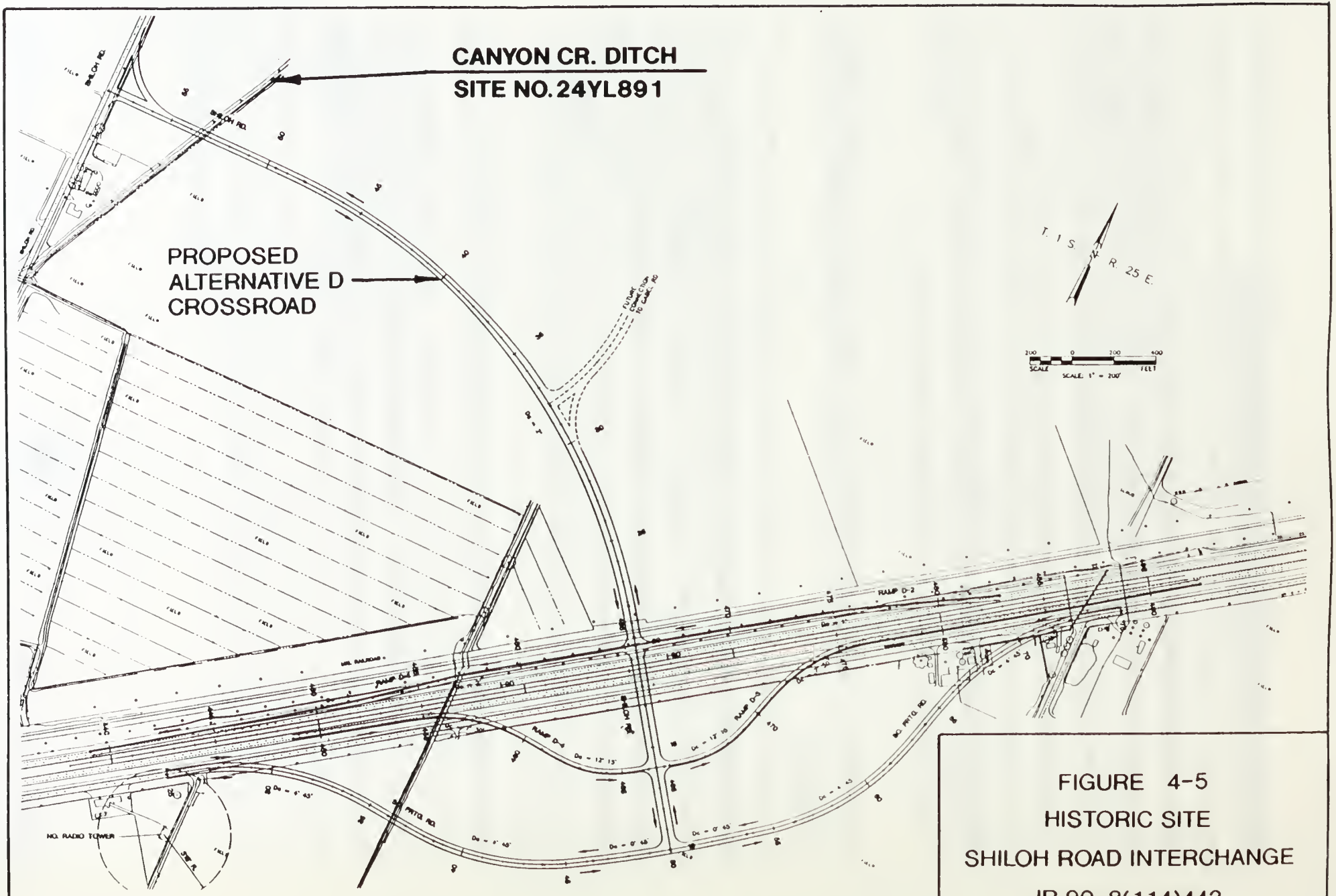


FIGURE 4-5
HISTORIC SITE
SHILOH ROAD INTERCHANGE
IR 90-8(114)443

HAZARDOUS WASTE SITES

Coordination has taken place with the U.S. Environmental Protection Agency (EPA) and the Montana Department of Health and Environmental Sciences (MDHES). Copies of pertinent correspondence are included in Appendix A of this document. There are no sites that are within the alternatives area that are on the EPA's National Priorities List (NPL) or on the EPA inventory of identified hazardous waste sites. In addition there are no sites within the alternatives area that have been identified by the EPA relating to the manufacture, storage, use, treatment, transportation or disposal of hazardous substances/wastes as identified by the Resource Conservation and Recovery Act (RCRA).

The Environmental Section of MDT is currently in the process of revising its Hazardous Waste site evaluation procedures.

A field inventory has been completed to identify sites that have the potential for harboring hazardous wastes (e.g. fuel storage tanks, manufacturing facilities, etc.). Several sites within the project vicinity with the potential for harboring hazardous wastes have been identified. Selection of a "Build" alternative impacting one of these potential sites would require additional field work. This field work would include testing to determine whether or not a hazardous waste site actually exists and if it does, the extent of contamination.

The field inventory identified only one potential hazardous waste site associated with Alternative D, the preferred alternative. The potential site consisted of an underground diesel fuel storage tank used in farming operations. Because Alternative D has been identified as the preferred alternative. The decision was made to test the site to determine if this potential site was in fact a hazardous waste site.

On March 24, 1992 the fuel tank was removed. Testing was performed during the removal and a soil sample taken from beneath the tank. Results of the testing indicate that no leaking of fuel occurred and this site is not a hazardous waste site. Should other potential sites be discovered that would be impacted by Alternative D, they would be investigated to determine whether or not they are hazardous waste sites.

The primary impact of a hazardous waste site would be the cost and extent of mitigation required. Secondary impacts from a Hazardous Waste site would include the restricted use of the area undergoing clean-up mitigation, and the increased potential for additional hazardous waste site discoveries. All of the testing, evaluation and analysis would be performed in advance of any right-of-way acquisition.

The "No-Build" alternative would have no impacts on any potential hazardous waste sites.

Cumulative impacts would include potential future sites associated with future development. These sites have the potential to include underground fuel storage tanks and materials used in manufacturing facilities. Future developments would be subject to zoning, permitting and other requirements to protect against the creation of hazardous waste sites. Mitigation of hazardous waste sites would make the affected area more attractive to commercial or industrial developments. Therefore, the long-term hazardous waste impact would be regarded as beneficial to growth following mitigation of the site(s).

VISUAL IMPACTS

Visual impacts would be similar for any of the "Build" alternatives. The primary visual impacts would be from relocation of the South Frontage Road, construction of access ramps and for Alternatives B and D, construction of a new overpass. The existing Shiloh Road overpass would be reconstructed for Alternative C resulting in less visual impact.

In general, none of the "Build" alternatives would substantially impact the visual quality of the I-90 corridor in the study area and would be compatible with the overall existing transitional character of the visual resources.

Secondary visual impacts from the "Build" alternatives would be related to the removal of structures and vegetation (primarily trees and shrubs) and the use of farm lands for connecting roads to the new interchange. These are described under the Economic, Land Use, and Relocation Impacts Sections preceding. The cumulative visual impacts would include the future development of the area. The visual character of the area is currently in transition from rural/agricultural to residential/commercial. Construction of the proposed interchange has the potential to accelerate the transition of the visual character of the area by its growth enhancing characteristics.

Visual impacts from the construction of the proposed project itself and any future development would be less for the alternative located furthest from sensitive viewer groups. Alternative D is located furthest from developed residential and commercial areas. Additional development encouraged by the construction of this proposed project would be subject to zoning ordinances.

The "No-Build" alternative would have no direct impact on any visual resources. As the community continues to expand in a westerly direction, the visual character of the area will continue to shift from rural agricultural to commercial.

ENERGY

Computation of energy consumption relative to the proposed project is a highly complex problem if operating conditions on alternate routes within the structure of the existing street system is considered. Construction of the proposed interchange would involve intersection control at the ramps which would mean various rates of consumption for

acceleration, deceleration and idling time. However, the "No-Build" alternative would involve similar rates of consumption associated with controlled intersections and congested conditions.

The primary energy consumption impact would be the reduction of energy usage to the traveling public in the study area. A secondary impact would be the additional energy consumed during the actual construction of the proposed interchange.

An analysis of relative travel times provides a means of computing average energy consumption based on an assumption of similar operating conditions between alternatives. Under such an assumption along with an average travel speed of 25 mph and an average mileage of 18 mpg in urban conditions, the energy savings compared to the "No-Build" condition can be estimated. The estimated energy savings are based on estimated travel time savings expressed in vehicle hours per day. The estimated energy savings, compared to the "No-Build" condition are listed below:

Alternative	Savings of Gallons of Gasoline Per Year
B	259,000
C	336,000
D	348,000

A precise estimate of energy savings has not been computed. The relative comparison demonstrates that construction of any of the build alternatives would result in considerable energy savings.

Energy-related impacts on growth potential are very difficult to estimate. However, they would not adversely affect this proposed project's growth enhancement impact potential (described previously).

UTILITIES IMPACTS

The primary impacts to utilities from any of the "Build" alternatives would be in relocating, or otherwise adjusting these facilities to accommodate the new interchange. Secondary impacts would be in the brief interruptions of service on the facilities being relocated. The cumulative impacts would be in improved utility facilities which are usually new and/or upgraded relocated features.

The "No-Build" alternative would have no impacts on existing utility facilities. Alternatives B, C and D would each have varying primary, secondary and cumulative impacts on utilities.

Alternatives B, C and D would each require adjustments to the following utilities:

- Montana Power Company - Electrical Service
- Williston-Basin Interstate Pipeline Company - 12" Natural Gas Pipeline
- U.S. West Communications - Underground and Overhead Phone Lines
- Montana Rail Link - Railroad Communication Lines

Only Alternatives C and D would require adjustment of natural gas facilities operated by Montana-Dakota Utilities Company.

The estimated costs to relocate the utilities impacted by the build alternatives vary by approximately 13% between alternatives. The estimated costs for relocation are presented in the Alternatives Chapter of the document.

All utility relocations will be handled in accordance with Montana Department of Transportation's standard utility relocation policies. There are no utilities that would be affected by this proposed action subject to the Utility Siting Act.

This proposed project's impacts to utilities would have no adverse impacts on its growth-enhancement potential (described previously). The adverse secondary impacts of service disruptions would be mitigated by their short-term duration, and the improved facilities following their relocation or adjustment.

CONSIDERATIONS RELATING TO PEDESTRIANS AND BICYCLISTS

Existing pedestrian and bicyclist usage in the project area is very limited. There are no attractions in the area of the interchange for which this mode of transportation would be particularly suited. A bike path, constructed in 1975, is located along the south side of the South Frontage Road between the 56th Street West underpass and the Canyon Creek School, approximately one mile west of the existing Shiloh Road Overpass. This is the only known established bike or pedestrian facility in the area. Potential conflicts with this route were but one factor of many considered in eliminating Alternative A from further consideration as a reasonable alternative.

Future bicycle and pedestrian demand in the area have no growth-enhancing potential since land use and zoning in the area would see development of light industrial and other trip attractions not conducive to this mode choice. Construction of ZooMontana near Shiloh Road has the potential to induce slight increases in bicyclist traffic. However, distances between residential areas and the zoo would not make walking a mode of choice.

The eight foot shoulders featured in the proposed design of roadway sections would be able to accommodate whatever demand that would exist for pedestrian or bicycle traffic in the future. If future land use changes are proposed that would have a bearing on pedestrian or bicyclist activity, the local City-County Planning department would control development and require impact identification and mitigation.

CONSTRUCTION IMPACTS

Construction related activities would result in some short term adverse impacts which cannot be avoided. However, these impacts would be temporary in nature and should only last for the duration of construction activities. Construction related impacts will include:

Primary Construction Impacts

- emissions from asphalt plants and crushers,
- dust from construction equipment activities,
- increased noise levels from construction equipment,
- potential for erosion from fresh cut and fill slopes,
- increases in water turbidity in streams from construction activities in these areas, and

Secondary Construction Impacts

- inconvenience to highway users resulting from delays, detours, and temporary surfacing.
- inconvenience to area residents, business owners, and employees resulting from delays, detours and temporary surfacing.

The cumulative construction related impact from this proposed project would be the total of the primary and secondary impacts occurring at the same time to the study area. During this period, there would also be a minor growth-inhibiting potential to the immediate area. However, these impacts would occur only during the periods of actual construction.

These adverse impacts would be minimized to the extent practicable through proper construction practices as defined in the MDT Standard Spe- -cations for Road and Bridge Construction. Air quality permits from the State Air Quality Bureau would be required for asphalt plants and crushers. Dust would be controlled by watering or other acceptable methods. Construction related erosion would be controlled and slopes revegetated as soon as practical. A traffic control plan would be developed to minimize inconvenience to motorists during construction.

Locations of borrow material for embankment construction and sources for base and surfacing aggregates have not yet been defined. Borrow material removal and gravel pits would be subject to applicable rules and regulations of the Montana Open Cut Mining Act, necessitating a mine reclamation plan to be filed with the State.

Construction impacts would be similar for any of the "Build" alternatives. Construction of most of the new roadways would occur outside the existing roadway limits allowing traffic to be maintained until completion of the new roadway segment. Some short term delays would occur while connections to the existing roadway are being accomplished. The existing Shiloh Road alignment and overpass structure would not be affected for construction of Alternatives B or D and would continue to serve traffic needs. Construction of a new overpass structure or reconstruction of the existing structure would require temporary closure of two directional lanes on I-90 as work would be in progress to place bridge beams. A standard interstate crossover with bi-directional traffic on the remaining two lanes would be utilized to accomplish the closure.

Construction of an interchange at the Alternative C location would be substantially more complex than the other "Build" alternatives. This added complexity is due to the fact that the existing crossroad and structure would be reconstructed while maintaining traffic through the work area. Construction of this alternative would cause considerably more and longer delays to the traveling public as alternative routes for detours are several miles from the existing overpass.

RELATIONSHIP OF LOCAL SHORT-TERM USE VS. LONG-TERM PRODUCTIVITY

The proposed action would require the use of resources and cause adverse and beneficial impacts to the environment. The proposed action would also enhance the long-term productivity of the area.

The impacts of the "Build" alternatives are similar in nature and have been discussed in this chapter. The short-term impacts of the proposed action include:

- Adverse impact to air and water quality due to construction activities.
- Increased noise levels during construction.
- Inconvenience to motorists from delays, detours and temporary surfacing.
- Economic benefits of construction.
- Commitment of natural, human and fiscal resources (land, fossil fuels, construction materials, labor and federal, state and local funds).

The long-term benefits of the proposed action include:

- Improved access to the Billings area.
- Energy savings through reduced travel times.

- Increased productivity through the more efficient movement of people and goods on the transportation system.
- Increased capacity of the urban transportation system.

The proposed action is based on comprehensive planning efforts. The project was first identified as a future project in the 1969 Transportation Plan and has been included in every update of the plan since that time, including the 1990 Transportation Plan. The proposed project is consistent with local planning efforts. The Yellowstone County Board of Planning, the designated Metropolitan Planning Organization (MPO) for the Billings urbanized area, strongly supports the project. The project has been designated as the top priority among four local interstate projects in the 1991-1995 Transportation Improvement Program.

The impacts of the proposed action and use of resources are consistent with the maintenance and enhancement of long-term productivity in the Billings area.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Construction of any of the "Build" alternates would involve a similar commitment of a range of natural, physical, human and fiscal resources. The proposed action would require between 51.1 and 61.5 acres of land in addition to the land already in use for area roadways. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels and highway construction materials such as cement, aggregate, and bituminous material would be expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use will not have an adverse effect upon continued availability of these resources.

A certain amount of human resources (labor) would be required to design, construct and maintain the proposed facility. Construction of the facility would require a substantial one-time expenditure of both State and Federal funds which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, State, and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time, and greater availability of quality services which outweigh the commitment of these resources.

CHAPTER 5 - LIST OF PREPARERS

The Montana Department of Transportation (MDT) and the Federal Highway Administration (FHWA) are the government agencies responsible for preparing this environmental document. Due to the project schedule and staffing levels, consultants were retained to advance the project.

The prime consultant was HKM Associates located in Billings, Montana. HKM Associates is a multi-disciplinary firm with expertise in such areas as transportation, utilities, structures, hydrology, hydraulics, soils and geology.

This document was developed using an inter-disciplinary approach to ensure the integrated consideration of environmental, social, economic and technical factors. HKM Associates retained the services of several other consulting firms to provide expertise in various sections of this document.

HDR Engineering, Inc., a multi-disciplinary firm located in Bellevue, Washington, developed the detailed geometrics of the alternatives and provided construction related information.

Marvin and Associates, a transportation consulting firm located in Billings, Montana, provided the transportation and traffic engineering analysis and assisted in the development and evaluation of the alternatives.

ECON, Inc., an ecological consulting service located in Helena, Montana, performed the wetlands inventory and biological assessments for the project area.

Ethnoscience, a private consulting firm located in Billings, Montana, provided the cultural resource inventories of the project area.

Lisa Bay Consulting, located in Helena, Montana, performed the analysis relating to the socio-economic aspects of the proposed action.

Various Department of Transportation's Sections provided assistance on the project in areas relating to traffic projections, noise impacts and right-of-way considerations.

The principal individuals involved in the preparation of this document and their primary area of expertise follows:

MONTANA DEPARTMENT OF HIGHWAYS

David S. Johnson, P.E., Preconstruction Engineer, Preconstruction Bureau

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FEDERAL HIGHWAY ADMINISTRATION

Dale W. Paulson, Environment and Project Development Engineer, Montana Division.

HKM ASSOCIATES

A. T. Kersich, P.E., Principal-in-Charge - B.S. Civil Engineering, University of Detroit, 1952. President of HKM Associates, Mr. Kersich has 36 years of diverse engineering experience. Mr. Kersich served as Principal-in-Charge for this project.

John A. Shoff, P.E., Project Manager - B.S. Civil Engineering, Montana State University, 1981. Mr. Shoff has eight years of experience in site planning and transportation. Mr. Shoff has served in project management and design capacities on various MDOH projects. Mr. Shoff served as Project Manager for this project and performed technical analysis and design relative to alternatives development and impacts evaluation.

Scott Bloomenrader, L.S., Land Surveyor - Black Hills State College. Mr. Bloomenrader is a Registered Land Surveyor responsible for design and legal surveys. Mr. Bloomenrader has 21 years experience in providing surveys for various transportation and utility projects.

David C. Riegel, Engineering Technician - B.S. Construction Engineering Technology, Montana State University, 1981. A designer in the Transportation Department, Mr. Riegel has 13 years experience as a designer and draftsman on various MDOH projects. Mr. Riegel assisted in developing the geometrics of the various alternatives.

Ken Hein, Engineering Technician - Billings Vo-Tech, 1973. Mr. Hein has 18 years experience as a designer/draftsman on various transportation and utility projects. Mr. Hein has prepared exhibits for the document.

Julie Henderson, Word Processor - B.S. Business Education, Eastern Montana College, 1982. Ms. Henderson has 3 years experience as a word processor. Ms. Henderson assisted with the word processing and editing responsibilities for this project.

Connie Carpani, Word Processor. Mrs. Carpani has 25 years experience as a secretary, and 8 years experience as a word processor. Mrs. Carpani assisted with the word processing and editing responsibilities for this project.

HDR ENGINEERING, INC.

Ross Fenton, P.E., Senior Design Engineer - B.S. Civil Engineering, Montana State University, 1973. Mr. Fenton has 18 years civil engineering, highway engineering and design experience. Mr. Fenton developed the preliminary alternatives and cost estimates.

Warren Heen, P.E., Senior Design Engineer - B.S. Civil Engineering, University of North Dakota, 1961. Mr. Heen has 30 years civil engineering, highway engineering and design experience. Mr. Heen developed the preliminary alternatives and cost estimates.

MARVIN AND ASSOCIATES

Robert R. Marvin, P.E. - President, B.S. Civil Engineering, Montana State University, 1971. President of a traffic and transportation engineering consulting firm since 1983, Mr. Marvin has twenty years of experience in transportation planning and design having worked with the Montana Department of Highways and private

consultant engineers. Mr. Marvin performed the traffic analysis for this project and authored several sections in the Purpose and Need, Alternatives, and Environmental Consequences Chapters of this document.

LISA BAY CONSULTING

Lisa Bay, Socio-Economic Consultant - B.A. Environmental Planning, University of California, 1975. Ms. Bay has 14 years experience as an independent consultant specializing in environmental assessments, economic studies and land use planning. Ms. Bay was responsible for the socio-economic studies for this project.

James R. Boyer, Social Economist - M.S. Urban Planning, University of Arizona, 1974. Mr. Boyer has more than 15 years experience as a land use planner and economist in Montana. Mr. Boyer assisted in the socio-economic studies for this project.

ECON, INC.

Robert E. Carroll, President - M.S. Applied Science, Montana State University, 1958. Mr. Carroll has participated in over 400 scientific projects and authored or co-authored 58 publications. Mr. Carroll participated in the photo-interpretation and report preparation for the Wetlands Inventory and Biological Assessment.

Robert L. Eng, Ph.D. - Wildlife Management, University of Minnesota, 1959. Dr. Eng has over 30 years experience in wildlife habitat and management. Dr. Eng performed the wildlife and wildlife habitat investigations for this project.

Phillip W. Johnson, Botanist - B.S. Range Science, Montana State University, 1978. Mr. Johnson has over ten years experience as a botanist for projects in Montana, Wyoming, North Dakota and South Dakota. Mr. Johnson performed vegetation studies for this project.

ETHNOSCIENCE

Sherri Deaver, Ph.D. - Anthropology, Washington State University, 1975. Ms. Deaver has 15 years experience in northwest plains anthropology and served as principal investigator for this project.

Mike Bergstrom, Archaeologist - B.A. Anthropology, Montana State University, 1984. Mr. Bergstrom has seven years experience in northwest plains archaeology and performed the primary archaeological inventory.

Margaret Bergstrom, Surveyor - B.A. Psychology, Eastern Montana College, 1980. Ms. Bergstrom has two years archaeological experience and assisted in the archaeological inventory.

Joan Brownell, Historian - M.A. History, Montana State University, 1981. Ms. Brownell has 12 years experience in northwest plans history and performed historic site recording and evaluation for this project.

Ken Karsmizki, Historian - M.A. History, Montana State University, 1981. Mr. Karsmizki has ten years experience in northwest plains history and performed historic site recording and evaluation for this project.

CHAPTER 6 - DRAFT EIS CIRCULATION LIST

LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE EIS ARE SENT

FEDERAL OFFICES

Department of the Army
Omaha District Corps of Engineers
Attn: Mr. Richard D. Gorton, Chief
Environmental Analysis Branch
215 North 17th Street
Omaha, NE 68102

U.S. Department of Agriculture
Soil Conservation Service
Montana State Office
Federal Building, Room 443
10 East Babcock Street
Bozeman, MT 59715

Federal Emergency Menegement
Agency
Region VIII
Denver Federal Center
Building 710
Denver, CO 80225

Federal Housing Administretion
Office of the Director
Housing end Urben Development
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301 South Park, Drawer 10095
Helena, MT 59626

Federel Communicetions
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Field Operations Bureau
Seattle Field Office
One Newport, Room 414
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U.S. Department of the Interior
Director, Office of
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1849 C Street N.W.
Washington, D.C. 20240-0001

Federal Railroad Administretion
Office of Economic Analysis
(RRP-32)
400 Seventh Street S.W.
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Project Manager
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U.S. Department of the Interior
Chief, Environmental Impacts
Assessment Program
U.S. Geological Survey, MS-760
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Reston, VA 22092

U.S. Department of the Interior
Office of Environmental Affairs
Building 56, Room 1018
P.O. Box 25007 (D-108)
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U.S. EPA Montana Office
Attn: EIS Review
301 South Park, Drawer 10096
Helena, MT 59626

E.P.A. Region 8
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One Denver Place
949 - 18th Street
Denver, CO 80202-2405

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U.S. Geological Survey
Water Resources Division
Room 428, Federal Building
301 South Park, Drawer 10076
Helena, MT 59626

U.S. Department of Transportation
Federal Highway Administration
301 South Park, Drawer 10056
Helena, MT 59626

U.S. Fish & Wildlife Service
Montana Office
Enhancement Division
Mr. Kemper McMaster, Field Supvr.
Federal Building, 301 South Park
Helena, MT 59626

U.S. Fish & Wildlife Service (ES)
1501 - 14th Street West
Suite 230
Billings, MT 59102

Director, Federal Agency
Liaison Division
Office of Federal Activities
EPA Environmental Review
Coordinator
Washington, D.C. 20460

U.S. Department of Agriculture
Soil Conservation Service
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Building A, Suite 7
1629 Avenue D
Billings, MT 59102

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Stream Protection Coordinator
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Helena, MT 59620

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Environmental Sciences
Solid & Hazardous Waste Bureau
836 Front Street
Helena, MT 59620

Department of Health &
Environmental Sciences
Air Quality Bureau
Cogswell Building
Helena, MT 59620

Department of Health &
Environmental Sciences
Water Quality Bureau
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Helena, MT 59620 (DEADHEAD)

Department of Natural Resources
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Office of the Director
1520 East 6th
Helena, MT 59620

Environmental Quality Council
Office of the Director
Capitol Post Office
P.O. Box 215
Helena, MT 59620

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Montana State Library
1515 East Sixth Avenue
Helena, MT 59620

Montana Historical Society
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225 North Roberts Street
Helena, MT 59620

Montana State University
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State Clearinghouse
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State Soil Conservation Service
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P.O. Box 4129
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Montana Motor Carriers Association
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201 International Way
Missoula, MT 59807

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Billings, MT 59108

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Lora Wiedrick
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Billings, MT 59101

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Glendive, MT 59330

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Box 245, Rout 9
Billings, MT 59101

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3352 Winchell Lane
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William Wooston
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Billings, MT 59102

Yellowstone Valley Central
Labor Council
Attn: Pres. - Derrell Holzer
24 South 29th Street
Billings, MT 59101

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Billings, MT 59101

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Leroy I. & Edna Mary Yost
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ZooMontana
Mr. Jim Duncan, Administrator
P.O. Box 955
Billings, MT 59103

CHAPTER 7 - COMMENTS AND COORDINATION

A proposed interchange at the Shiloh Road location has been identified as a future project since a 1969 planning study. There have been numerous times in the years from 1969 to 1989 where this proposed project has been identified as a future project.

Coordination efforts specific to the advancement of the project and preparation of this document were initiated by the Montana Department of Highways on July 3, 1989 when a letter of intent was issued by MDOH to federal, state and local agencies and affected private organizations. Comments and information were requested which would be relevant to this project.

A Notice of Intent to prepare an EIS for this project was published in the Federal Register on August 3, 1989. The notice included a request for comments and suggestions.

The initial scoping meeting for this project was held on December 12, 1989. The meeting was held to present the preliminary alternatives being considered to the public and to identify issues and concerns that were considered to be important to the project. An information packet was available at the meeting describing the proposed action and the environmental review process. A form was provided to those in attendance to make written comments regarding this project. The meeting was attended by approximately 125 people who had the opportunity to review display boards showing the project alternatives and ask specific questions. A transcript of the meeting, copies of comments received and a technical memorandum prepared to summarize the meeting are on file with MDT in Helena.

A second scoping meeting to present alternatives, request input and present the preliminary findings of the evaluations undertaken for preparation of the EIS was held

on July 11, 1990. The format of the second scoping meeting was similar to the first meeting. Information packets and comment forms were available. The display boards had been revised to show modifications to the alternatives as the proposed design progressed. The meeting was attended by approximately 118 individuals. A transcript of the meeting, copies of comments received and a technical memorandum prepared to summarize the meeting are on file with MDOH in Helena.

Coordination has taken place with the Billings Technical Advisory Committee (TAC). On December 6, 1990 a meeting was held to review the project alternatives and their connections to the urban transportation system.

As part of the coordination process, various groups have voiced their support for the Alternative D location. These groups include:

- Yellowstone County - Board of Planning
- Yellowstone County Commission
- Billings Chamber of Commerce
- Montana Trade Port Authority
- ZooMontana

Copies of correspondence relating to this project are included in Appendix A.

A public hearing will be scheduled following distribution of this Draft Environmental Impact Statement. The purpose of the hearing will be to discuss the environmental document and receive comments.

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APPENDIX A - LETTERS OF COORDINATION

ALLEN C KOLSTAD
LIEUTENANT GOVERNOR

State of Montana
Office of The Lieutenant Governor
Helena 59620
(406)444-3111

July 12, 1989

Date Recd. Preconst.				
Act	Info	MAIL ROUTE	Action	Initial
		30		
		30 Eng. Specialists		
		31 Control Plans		
		32 Loc. Road Design		
		33 Environment		
		34 Hydraulic		
		35 Surfacing Design		
		36 Traffic		
		37 Pub. Hearing		
		38 Preengineering		
✓		39 Consultant Design	✓	
	✓	[illegible]	✓	
✓		File	✓	

Mr. Stephen C. Kologi, Chief
Preconstruction Bureau
Montana Dept. of Highways
2701 Prospect Avenue
Helena, Montana 59620

RE: Federal Aid Highway Project on Interstate 90 - Shiloh Road Interchange
Montana State IGR Clearinghouse SAI No. MT890712-018-X

Dear Mr. Kologi:

The above-captioned has been received. In order to provide notification to parties that may be interested in review and/or comment, it will be listed in the next Intergovernmental Review Bulletin issued from this office.

Any inquiries or comments regarding the report will be directed to you. Please provide copies of any comments received to the Clearinghouse for our files.

The Clearinghouse intends to take no further action on this proposal.

Sincerely,

DEBBIE DAVIS
Clearinghouse Manager

Enclosure

MONTANA INTERGOVERNMENTAL REVIEW CLEARINGHOUSE

REVIEW AND COMMENT FORM

Applicant: Department of Highways Phone: _____
ATTN: Mr. Stephen Kologi
Address: 2701 Prospect Avenue, Helena, Montana 59620

Subject: Shiloh Road Interchange

Clearinghouse SAI No. MT890712-018-X

YOUR COOPERATION IS REQUESTED IN COMPLETING YOUR REVIEW AND RETURNING THIS FORM WITH YOUR COMMENTS TO THE ABOVE ADDRESS, WITH A COPY TO THE CLEARINGHOUSE, NO LATER THAN August 12, 1989

	YES	NO	COMMENTS
Is this proposal consistent with the plans, goals and objectives of your agency?			
Does the proposed action conflict with any applicable statute, order, regulation or rule with which you are familiar?			
Does this proposal overlap, conflict or duplicate other existing programs or agencies?			

Describe any suggestions or means of improving or strengthening the proposed plan.

Please convey your general conclusion by checking the appropriate response(s).

- ☐ Proposal is supported.
- ☐ Support only with conditions described below.
- ☐ Non-supportive for the reasons described below.
- ☐ Additional information is desired as described below.
- ☐ No comment on this proposal.

REMARKS: _____

Reviewer: _____ Title: _____

Address: _____ Phone: _____

Signature: _____ Date: _____

Return to Applicant listed above, with a copy to: Montana IGR Clearinghouse
Lt. Governor's Office, Room 210
State Capitol
Helena, Montana 59620

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Fish and Wildlife Enhancement
Federal Bldg., U.S. Courthouse
301 South Park
P.O. Box 10023
Helena, Montana 59626

IN REPLY REFER TO
FWE-61130-BILLINGS
RE: IR 90-8(114)443
Shiloh Road Interchange

July 13, 1989

RECEIVED
JUL 18 1989
ASSOCIATE

Mr. Stephen Kologi
Montana Dept. of Highways
Public Hearing Office
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Kologi:

We have reviewed your July 3, 1989 letter giving notice of your intention to develop an Interchange at the juncture of Interstate 90 and Shiloh Road, Billings, Montana (or at an alternative location nearby).

The bald eagle (Haliaeetus leucocephalus) occurs nearby along the Yellowstone River as a winter resident and seasonal migrant and the peregrine falcon (Falco peregrinus) may occur as a migrant. However, considering the specific nature, location and extent of the proposed project, we do not expect any project related impacts to these endangered species.

If encroachment on Canyon Creek is avoided (this stream is located relatively near to the proposed Shiloh Road Interchange), we would also not expect adverse impacts on habitats of other fish and wildlife species.

Sincerely,

For Kemper McMaster
Acting State Supervisor
Montana State Office

cc: Jeff Ryan, Montana Dept. of Highways (Helena, MT)
Suboffice Coordinator, USFWS, FWE-61130 (Billings, MT)

JGW/dc

"Take Pride in America"

Date Recd. Preconst. 7/14/89

Act	Info	MAIL ROUTE	Allison	Initial
		30		
✓		30 Eng. Specialties		
		31 Contract Plans		
		32 Loc. Road Design		
✓		33 Environment		
		34 Hydraulic		
		35 Surfacing Design		
		36 Traffic		
		37 Pub. Hearing		
		38 Photogrammetry		
✓		39 Consultant Design		
✓		Montana		
✓		File		

State Historic Preservation Office
Montana Historical Society

Mailing Address: 225 North Roberts • Helena, MT 59620-9990
Office Address: 102 Broadway • Helena, MT • (406) 444-7715

July 13, 1989

RECEIVED
JUL 18 1989
ASSOCIATE

Mr. Stephen Kologi, Chief
Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620

Re: IR90-8(114)443, Shilo Road Interchange

Dear Mr. Kologi:

Thank you for informing us about the above cited highway development project. We would be happy to provide information concerning previously recorded cultural resources in the project area, and recommendations for compliance with the National Historic Preservation Act.

Thank you for consulting with us.

Sincerely,

David Schwab
State Archaeologist

File: MDOH IR90-8(114)443, Shilo Road Interchange

Date Recd. Preconst. 7/14/89

Act	Info	MAIL ROUTE	Allison	Initial
		30		
✓		30 Eng. Specialties		
		31 Contract Plans		
		32 Loc. Road Design		
✓		33 Environment		
		34 Hydraulic		
		35 Surfacing Design		
		36 Traffic		
		37 Pub. Hearing		
		38 Photogrammetry		
✓		39 Consultant Design		
✓		Montana		
✓		File		

DEPARTMENT OF COMMERCE
AERONAUTICS DIVISION

STAN STEPHENS, GOVERNOR
P.O. BOX 5178
2630 AIRPORT ROAD

STATE OF MONTANA

(406) 444-2506
HELENA, MONTANA 59604

July 17, 1989

Mr. Stephen C. Kologi, P.E.
Chief, Preconstruction Bureau
Department of Highways
2701 Prospect Avenue
Helena, MT 59620

FILE: IR 90-8(114)443
Shiloh Road Interchange

Dear Mr. Kologi:

The Montana Aeronautics Division has reviewed the above-mentioned project; and, in our opinion, this project will not have any adverse effects on aeronautical activities in this area.

Thank you for the opportunity to comment on this project.

Sincerely,

Michael D. Ferguson, Administrator
Aeronautics Division

Barbara Brouf
for Gerald C. Burrows, Chief
Airport/Airways Bureau

bp

Date Recd. Preconst. 7-21

Act	Info	MAIL ROUTE	Attach	Initial
		28		
		30 Eng. Specialties		
		31 Contract Plans		
		32 Loc. Road Design		
		33 Environment		
		34 Hydraulic		
		35 Surfacing Design		
		36 Traffic		
		37 Pub. Hearing		
		38 Photogrammetry		
	L	39 Consultant Design		
	L	Ventura		
	C	File		

"AN EQUAL OPPORTUNITY EMPLOYER"

(168)

ROBERT E. & JOANNE W. MARBLE
7900 S. Frontage Road
Billings, Montana 59101

July 22, 1989

Mr. Larry W. Larsen, Director
MONTANA HIGHWAY DEPARTMENT
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Larsen:

This letter is a request that the proposed "Shiloh Road Interchange" be located at the best possible location between Shiloh Road and 48th Street West, not in the immediate proximity of either. An intermediate location will serve many useful purposes:

1. Alleviate traffic congestion. All North-South roads in the Billings area are heavily used. Locating the interchange between Shiloh and 48th Street West will help to divert northbound traffic onto two roads rather then just one.

2. Save a number of businesses located near Shiloh Road and businesses and a school located near 48th Street West. The intermediate location will impact far fewer homes and businesses and no schools.

3. Reduce the cost of property acquisition by purchasing mostly vacant farm land.

4. Reduce the cost of construction by moving away from Canyon Creek which will have to be spanned by at least two new bridges if the existing Shiloh bridge is utilized in the interchange.

5. Provide two Interstate crossings by preserving the Shiloh bridge for local traffic crossings where interstate access is not a factor. This will substantially avoid congestion at the interchange, especially when ZooMontana becomes operational.

6. Provide convenient interstate access to all businesses preserved by this location and well as ZooMontana patrons and the new National Guard Armory.

Please consider this a plea for the very best long-range planning done in a cost-effective way.

Sincerely,

Robert E. Marble, President
BILLINGS NURSERY, INC.

Joanne W. Marble
Joanne W. Marble, Board Director
ZOOMONTANA, INC.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA NEBRASKA 68102 4978

REPLY TO ATTENTION OF

Planning Division

July 25, 1989

Date Recd. Preconst.

Act	Info	MAIL ROUTE	Attach	Initial
		30		
		30 Eng. Specialties		
		31 Contract Plans		
		32 Loc. Road Design		
		33 Environment		
✓		34 Hydraulic		
		35 Surfacing Design		
	✓	36 Traffic		
		37 Pub. Hearing		
		38 Photogrammetry		
	✓	39 Consultant Design		
		Stephen		
	✓			

Mr. Stephen C. Kologi, Chief
Preconstruction Bureau
Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Kologi:

We have reviewed the proposed Shiloh Road Interchange in Montana, reference IR 90-8(114)443, and we offer the following comments.

The design of the proposed project should ensure that the project is in compliance with flood plain management criteria of Yellowstone County and the State of Montana. As a minimum, the design should ensure that the 100-year flood water surface elevation of any stream affected is not increased more than one foot relative to pre-project conditions. It is desirable, however, that water surface elevations either remain the same or decrease as a result of this project.

It appears that some of the construction could take place in waterways or wetlands which are classified as waters of the United States and are therefore regulated under Section 404 of the Clean Water Act. If construction activities involve the temporary or permanent placement of dredged or fill material into waters of the United States, a Section 404 permit may be required. For a detailed review of the permit requirements, final project plans should be sent to:

Mr. Robert McInerney
U.S. Army Corps of Engineers
ATTN: DNRC/CDD
1520 East 6th Avenue
Helena, Montana 59620-2301

If you have any questions, please contact Mr. Steve Rothe of our staff at (402) 221-4579. Thank you for the opportunity to review this proposal.

Sincerely,

Richard D. Gorton
Chief, Environmental Analysis Branch
Planning Division

DEPARTMENT OF
HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU

STAN STEPHENS, GOVERNOR

STATE OF MONTANA

FAX # (406) 444-2608
(406)444-3454

Data Recd. Preconst.

Act	Info	MAIL ROUTE
		30
		30 Eng. Specialties
		31 Contract Plans
		32 Loc. Road Design
		33 Environment
		34 Hydraulic
		35 Surfacing Design
		36 Traffic
		37 Pub. Hearing
		38 Photogrammetry
		39 Consultant Design
		Stephen
		Williamson
		4
		File

2209 WELLS BUILDING
HELENA, MONTANA 59620

July 18, 1989

Stephen C. Kologi, P.E.
Chief, Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Kologi:

The Montana Department of Health and Environmental Sciences (MDHES) has reviewed your briefing letters (July 3, 1989) concerning the proposed Shiloh Road, West Billings, and South Billings interchange projects. Based on the preliminary project descriptions, MDHES believes that these projects will affect the Billings carbon monoxide state implementation plan (SIP). However, until additional project design and analysis work is performed, it is impossible to determine whether the projects will be beneficial or detrimental to air quality.

In 1977 the central business district (see Attachment #1) of Billings was designated by EPA as nonattainment for carbon monoxide. An attainment plan calling for modifications of Exposition Drive was developed and approved by EPA and completed in late 1984.

Data collected during the two years following the modification of Exposition Drive (1985-1986) indicates compliance with the standards. Unfortunately, the amount of data collected did not meet completeness requirements and EPA requested that the monitoring site be relocated to a position nearer the road. Yellowstone County initiated CO monitoring during January, 1988 at a new EPA-approved location. In addition to the permanent monitoring site, Yellowstone County performed a short-term carbon monoxide bag sampling project to determine the geographical distribution of CO concentrations. The bag sampling project, as well as the continuous monitoring site, continue to indicate that Billings is in compliance with the carbon monoxide standards.

If air monitoring data continues to show compliance through 1989, MDHES and the Yellowstone County Air Pollution Control Agency will request redesignation of the area to attainment. However, the redesignation and SIP process will require the completion of a carbon monoxide emission inventory and a demonstration that the area will remain in compliance considering future growth.

"AN EQUAL OPPORTUNITY EMPLOYER"

Since automobile exhaust is a major source of carbon monoxide emissions, the air quality impacts of the project will need to be evaluated during the planning process. Studies will be necessary (traffic distribution and perhaps dispersion modeling) to determine if traffic volumes and emissions will increase or decrease (most likely) in the nonattainment area or whether a new carbon monoxide problem will be created in another area, perhaps western Billings.

The MDHES, the Billings/Yellowstone City-County Planning Department, and Bill Cloud of your department are involved with the Billings carbon monoxide SIP. I am sure all of us would be glad to meet and discuss these projects with you.

Thank you for the opportunity to comment on these proposed projects.

Sincerely,

Bob Raisch

Bob Raisch, Supervisor
Air Toxics and Planning

BR:kh

Attachment

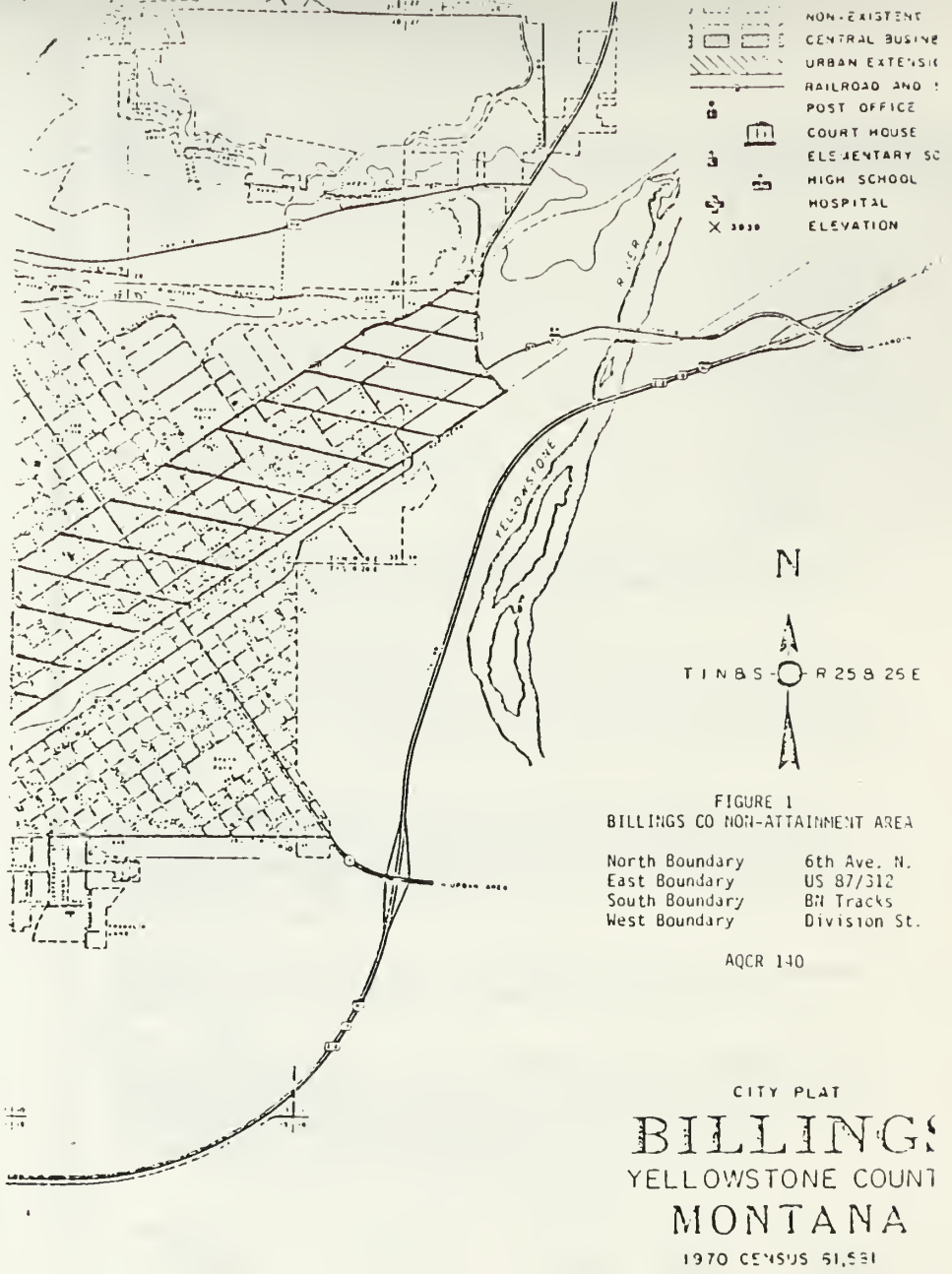


FIGURE 1
BILLINGS CO NON-ATTAINMENT AREA

North Boundary	6th Ave. N.
East Boundary	US 87/312
South Boundary	BN Tracks
West Boundary	Division St.

AQCR 140

CITY PLAT
BILLINGS
YELLOWSTONE COUNT
MONTANA
1970 CENSUS 51,581

BILLINGS
CHAMBER OF COMMERCE

RECEIVED
AUG 2 1989
HKM ASSOCIATES

Date Recd. Prepared 7-25-89

City	State	MAIL ROUTE	Activity	Initial
		30		
		30 Eng. Specialties		
		31 Contract Plans		
		32 Loc. Road Design		
		33 Environment		
		34 Hydraulics		
		35 Surfacing Design		
		36 Traffic		
		37 Pub. Hearing		
		38 Photogrammetry		
		39 Consultant Design		
		Karsen		
		Ventura		
		File		

July 27, 1989

Stephen C. Kologi, P.E., Chief
Preconstruction Bureau
2701 Prospect Ave.
Helena, MT 59620

Dear Mr. Kologi:

Thank you very much for your recent correspondence concerning Shiloh Road, West Billings, and South Billings Boulevard Interchanges.

As I am sure you are aware, the Chamber has been an active participant in the various phases of planning that have transpired to date. That involvement will be through the staff and through our Managed Growth Committee. Would you please note the following requests for each of the identified projects.

--IR 90-8 (114) 443
Shiloh Road Interchange

Please keep the staff and the Managed Growth Committee apprised of the planning process. As conceptual plans are developed, we would request that a presentation be made to the committee.

--IR 90-8 (113) 447
South Billings Blvd. Interchange

Please keep the staff and the Managed Growth Committee apprised of the planning process and the development timetable for this interchange.

--IR 90-8 (111) 446
West Billings Interchange

Please keep the staff and the Managed Growth Committee apprised of the planning process. Specifically, we would request that any and all preliminary or conceptual designs being considered be brought to the next Managed Growth Committee for review and input. The Chamber is extremely

200 No. 31th St. • PO. Box 2519 or 1155 • Billings, MT 59103 • (406) 245 4111 or 248 7979

interested in the long-term plans, not only for the interchange itself, but for the proposed modifications to the roadway system north of the interchange. As I am sure you are aware, there is a rather large hotel/motel complex south of the interchange to which the access can be difficult at best at times.

Again, thank you for your information to date and I am looking forward to hearing from you regarding the requested meeting.

Respectfully yours,

L. John MacMartin
Vice President

LJM/lsm

Canyon Creek School

School District No 4
3139 Duck Creek Road
Billings, Montana 59106

RECEIVED
AUG 7 1989
HIGH ASSOCIATES

July 27, 1989

State of Montana
Department of Highways
2701 Prospect Ave.
Helena, Montana 59620

Gentlemen:

In regard to your letter of July 3, 1989 concerning the Federal Aid Highway Project on Interstate 90, Canyon Creek School District #4 Board of Trustees, at the meeting of July 20, 1989, voted unanimously against the Duck Creek option.

The board felt that an overpass in the Duck Creek proximity would be hazardous to the safety of the children in our school system. Instead the board would like to strongly recommend that the overpass be constructed at the Shiloh Road location. The board feels that at Shiloh an approach already exists, therefore the cost may be less and would provide more direct access to Billings.

Sincerely,

Carol Wright

Carol Wright
Principal

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

STAN STEPHENS, GOVERNOR

1520 EAST SIXTH AVENUE

STATE OF MONTANA

DIRECTOR'S OFFICE (406) 444-6699
TELEFAX NUMBER (406) 444-6721

MAIL ADDRESS
HELENA, MONTANA 596...

Date Recd. Preconst.

Init.	Initial
30	
30 Eng Specialties	
31 Contract Plans	
32 Loc Road Design	
33 Environment	
34 Hydraulic	
35 Surfacing Design	
36 Traffic	
37 Pub Hearing	
38 Photogrammetry	
39 Consultant Design	
File	

August 2, 1989

Stephen C. Kologi, P.E.
Chief, Preconstruction Bureau
Montana Department of Highways
2701 Prospect
Helena, MT 59620

Re: IR 90-8(114)443
Shiloh Road Interchange

Dear Mr. Kologi:

You recently invited comments pertaining to the referenced project. The Department of Natural Resources and Conservation has these concerns.

First, water may be needed for dust control or some other construction-related purpose. If the contractor uses surface water or over 100 gallons per minute of ground water, a temporary water use permit will have to be obtained. For information about application forms and procedures, contact the DNRC Water Rights Field Office, 1537 Avenue D, Suite 105, Billings, MT 59102 (phone 657-2105).

Second, this project may affect irrigation facilities. Care should be taken during construction not to interfere with existing water rights and any facilities that may be involved should be maintained or replaced. Our Billings Water Rights Field Office can provide information on any water rights that may be affected.

Thank you for the opportunity to comment.

Sincerely,

Jim Bond

Jim Bond
Information Officer/
Citizen Participation Advocate

copy: Ron Guse, Water Resources Division
Keith Kerbel, Billings Field Office
Intergovernmental Review Clearinghouse

CENTRALIZED SERVICES DIVISION (406) 444-6700 | CONSERVATION DISTRICTS DIVISION (406) 444-6667 | ENERGY DIVISION (406) 444-6697 | OIL AND GAS DIVISION (406) 444-6675 | WATER RESOURCES DIVISION (406) 444-6601

Budget, Room 3002, New Executive Office Building, Washington, DC 20503.

Ronald Ritter,

Acting Director of Information Resources Management.

[FR Doc. 89-18152 Filed 8-2-89; 8:45 am]

BILLING CODE 7905-01-M

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement; Yellowstone County, MT

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an environmental impact statement will be prepared for a proposed highway project in Yellowstone County, Montana.

FOR FURTHER INFORMATION CONTACT: Dale Paulson, Environmental and Project Development Engineer, Federal Highway Administration, 301 South Park Street, Drawer 10056, Helena, Montana 59626-0056, Telephone: (406) 449-5310; or Mr. Steve Kologi, Chief, Preconstruction Section, Montana Department of Highways, 2701 Prospect Street, Helena, Montana 59620, Telephone (406) 444-6242.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Montana Department of Highways (MDOH) will prepare an Environmental Impact Statement (EIS) on a proposal to construct a new interchange providing access to Interstate 90. The proposed interchange would be located between Billings and Laurel, Montana in Yellowstone County. The proposed interchange is considered necessary to provide for existing and projected traffic demand for the expanding City of Billings.

Alternatives under consideration include: (1) Taking no action; (2) constructing an interchange at the Shiloh Road location; (3) constructing an interchange at the Duck Creek Road location; and (4) constructing an interchange at any feasible alternative between Shiloh Road and Duck Creek Road.

Letters describing the proposed action and soliciting comments will be sent to appropriate Federal, State and local agencies, and to private organizations and citizens who have previously expressed or are known to have interest in this proposal. A series of formal scoping meetings will be held near Billings beginning between October and December, 1989. In addition, a public hearing will be held. Public notice will be given of the time and place of the meetings and hearing. The draft EIS will be available for public and agency review and comment prior to the public hearing.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues are identified, comments and suggestions are invited from all interested parties. Comments and/or questions concerning this proposed action and the EIS should be directed to the FHWA at the address provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program)

Issued on July 28, 1989.

D.C. Lewis,

Assistant Division Administrator, Montana Division, Helena.

[FR Doc. 89-18153 Filed 8-2-89; 8:45 am]

BILLING CODE 4910-22-M

DEPARTMENT OF HIGHWAYS

STAN STEPHENS, GOVERNOR

2701 PROSPECT AVE

STATE OF MONTANA

HELENA, MONTANA 59620

August 4, 1989

AUG 8 1989

HKM ASSOCIATES

Carol Wright, Principal
Canyon Creek School
3139 Duck Creek Road
Billings, MT 59106

Subject: IR 90-8(114)443
Shiloh Interchange

Thank you for your letter regarding the Shiloh Road Interchange project. We appreciate the input you provided.

We have retained the firm of Hurlbut, Kersich, & McCullough (HKM) to develop an Environmental Impact Statement for this project. This firm is in the process of gathering data and will be holding public meetings in Billings soon.

We will relay this letter to HKM who will consider your comments and concerns in developing this project.

Robert R. Newhouse, P.E., Supervisor
Consultant Design Section

RRN:MAL:mb:5/mm

cc: T. J. Barnard, P.E., Administrator - Engineering Division
R. R. Ventura, P.E., District Engineer - Billings
R. R. Newhouse, P.E., Supervisor - Consultant Design Section
Hurlbut, Kersich, & McCullough Assoc.
P.O. Box 31318
Billings, MT 59107

AN EQUAL OPPORTUNITY EMPLOYER

ZOOMONTANA

RECEIVED
AUG 21 1989
HKM ASSOCIATES

August 18, 1989

Roy Ventura
District Engineer
Montana Highway Department
424 Morey
Billings, Montana 59101

Dear Roy:

ZooMontana is in the process of raising $4.5 million to build a zoological garden for the Northern Rocky Mountain region. We plan to begin construction soon.

The ZooMontana site, situated along Canyon Creek and adjacent to Shiloh Road, is ideal for our plans to build a zoological and botanical park. The site's close proximity to Interstate 90 and its location in Billings' growth pattern are factors that will determine ZooMontana's success.

The decision of the Highway Department to move forward with plans for an interchange at Shiloh Road is very important to ZooMontana. To be successful in sustaining the long term operations of the zoo, easy access for visitors is essential. A large portion of our projected revenue is estimated to come from travelers using Interstate 90.

We are concerned with the possibility that the new interchange could be constructed at Duck Creek Road rather than Shiloh Road. This could adversely affect the ease of access to the zoo and natural traffic patterns that could make the zoo more viable.

ZooMontana encourages the study of any location which makes Shiloh Road, not Duck Creek, the main artery for I-90 access. However, it is not our position or area of expertise to determine the precise location of the interchange. We support an economically feasible interchange that minimizes disruption of established businesses and homes while

P.O. BOX 955 • BILLINGS, MONTANA 59103 • 406 252 7100

providing maximum service to the public, provided Shiloh Road is retained as the main artery for I-90 access.

ZooMontana will be a major boost to the state and local economy with an estimated $6 million in new revenues generated each year. Additionally, the zoo will add to the cultural, educational, and recreational opportunities of our region, serving over 130,000 visitors annually.

Because of our high level of interest in this matter, we would request to be advised of the three sites that are ultimately to be studied and compared.

Thank you in advance for your assistance. If you would like more information about ZooMontana and our construction plans, please do not hesitate to contact our office.

Sincerely,

Patrick Hanley

Patrick W. Hanley
Chairman

/jh

cc: Montana Highway Commissioners
Montana Highway Department
HKM Associates

Montana Department
of
Fish, Wildlife & Parks

Helena, Montana 59620
November 24, 1989

RECEIVED
DEC 6 0 1989
HKM ASSOCIATES

Mr. David Johnson
Chief, Preconstruction Bureau
Department of Highways
2701 Prospect
Helena, MT 59620

Dear Mr. Johnson:

RE: IR 90-8(114)443
Shiloh Road Interchange

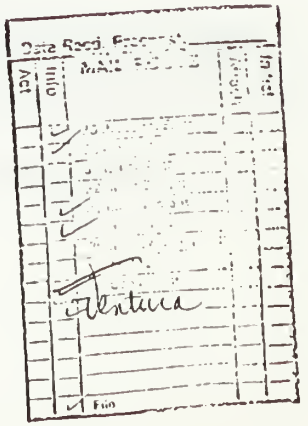
We have reviewed your above-mentioned proposed project for construction of a new interchange. The Department of Fish, Wildlife and Parks knows of no 6(f) or 4(f) Conversion of Use which would occur as a result of the proposed interchange construction.

Thank you for the opportunity to comment. We appreciate your cooperation.

Sincerely,

MARY ELLEN POOLE
Administration Officer I
Operations Bureau
Parks Division

MEP/th



Canyon Creek School

School District No. 4
3139 Duck Creek Road
Billings, Montana 59106

August 29, 1989

RECEIVED
SEP 7 1989
HKM ASSOCIATES

R.R. Newhouse, P.E., Supervisor
Consultant Design Section
Dept. of Highways
2701 Prospect Avenue
Helena, Montana 59620

Subject: I 90 - 8 (114)443
Shiloh Interchange

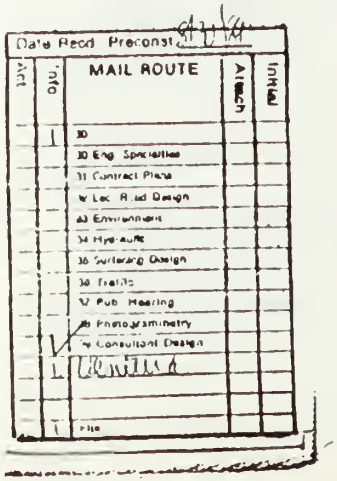
Thank you for your letter of response to Canyon Creek's input as to interchange placement.

Since the last correspondence we have learned that another option is possible for the placement of the interchange. We understand that a third location between Shiloh and 48th Street West is also possible.

Therefore, Canyon Creek School District would like to support either proposal, as long as it is not the 48th Street West option, because of the safety of our children.

Sincerely,

Carol Wright
Principal



Canyon Creek School

School District No. 4
4139 Duck Creek Road
Billings, Montana 59106

RECEIVED
DEC 0 8 1989
HKM ASSOCIATES

December 6, 1989

Mr. John Shoff P.E.
HKM Associates
P.O. Box 31318
Billings, Montana 59107

Re: IR 90-8 (114) 443
Shiloh Road Interchange

In response to your request of Canyon Creek School, I would like to present you with the following information.

* Due to the fact that Canyon Creek School is a rural school, the county has not provided crosswalks. Aprroximately two thirds of our students (about 150) ride buses. The remaining 75 bicycle or walk. There is a bike path/sidewalk from 56th street west and the frontage road to the school. There are students who walk from south of the school that cross Duck Creek Road. There is also a school speed zone directly north and south of the school on Duck Creek Road.

* Canyon Creek enrollment has been fairly steady at around 225 students.

* Canyon Creek School has recently regraveled it's playground (Oct. 1989), is in the process of fundraising for new equipment, and renovating a French Drain in our parking lot. The lot has no drainage and water stands up to 18" deep. We are awaiting a structural engineers report on our roof, as we may have to replace that, on December 18, at our scheduled board meeting. We will be receiving proposals from two architectural firms for the purpose of adding on a gymnasium/multi-purpose room. Their recommendations would lead to land purchases. A 24' X 28' work garage was just recently constructed, and a baseball field constructed the summer of 1989.

* The original school building was built in 1959, with a second wing in 1982. In 1987 a 40' X 70' annex was added behind the school, for additional classroom space.

* The school boundaries are from Shiloh Road west on Hesper to 54th St. West, South on 54th to Neibauer, West on Neibauer to 56th Street West, south on 56th to Danford Road, West on Danford to 64th St. West, south on 64th to Laurel Airport Road under freeway to Rudio Road, south on Rudio to Yellowstone River, ten miles south of River, East of River to Goodman Road, west to Wise lane, north on Wise Lane to Shiloh Overpass, north on Shiloh to Hesper.

* In addition to the above requested information, we ask you to consider the following points in preparation of your E.I.S.

    1. Trucks sliding off ramps directly adjacent to or near playgrounds, causing potential hazordous spills or direct injury.

    2. Noise from Jake Brakes, vehicle traffic effecting classrooms, outdoor P.E. activities etc.

    3. Vehicle emmissions adjacent to a playgound

    4. Asbestos particles from asbestos brakeshoes in trucks in a major breaking area.

* Where is the population growth in Billings/Yellowstone County in the last ten years to warrant a new west end interchange?

Please let me know if you need any further information. We look forward to hearing from you.

Sincerely,

Chip Stoecker
Chairman, Board of Trustees

Canyon Creek School

School District No. 4
[illegible] Duck Creek Road
Billings, Montana 59106

December 8, 1989

RE IR 90 -8 (114)443
Shiloh Road Interchange

As school board chairman of Canyon Creek School District #4, located west of Billings, in Yellowstone County, I have received numerous inquiries regarding the status of the "Shiloh Road" interchange project. There are many affected homeowners as well as Canyon Creek School that have concerns regarding this project. The Board of Trustees of Canyon Creek School District in its regular public meeting on July 20, 1989 voted to oppose the Duck Creek Road site for the interchange and instructed the principal to send a letter to the Montana State Department of Highways. This project was discussed again at the school board meeting of August 21, 1989, and a second letter sent opposing the Duck Creek Road/48th Street West site.

It is our understanding that the firm of Huribut, Kersich, & McCullough Associates has been retained for the purpose of developing an Environmental Impact Statement for this project. The school district and the affected homeowners of this area would like as much information as you could provide us in helping us to support and provide input to a location.

Citizens, taxpayers, and voters of this area continue to express their opposition to the Duck Creek Road/48th Street site, as it has been brought to the Board for six consecutive months. In addition to the opposition voiced by the school district, two committees have now formed opposing this location.

Canyon Creek School District is concerned for the safety of our students as I trust all of you are. A freeway interchange adjacent to an elementary school playground seems to be inappropriate, if indeed the Duck Creek Road/48th Street site is to be chosen. Please inform regarding how you will guarantee safety to our students and children.

Some of our concerns include:

* Trucks sliding off icy ramps with potential hazardous spills adjacent to playgrounds.
* Adjusting from freeway speeds (65 mph) immediately to a school zone (25 mph).
* Noise from Jake brakes and deceleration and its effect on classroom work or outdoor P.E. instruction.

* Excessive exhaust fumes adjacent to school and playground in a deceleration/acceleration area
* Suspended asbestos particulate from trucks braking in a heavy braking area
* Pedestrian and heavy bicycle users around a freeway interchange.
* Transients that hitchhike along freeways are found at interchanges. A school in plain sight and easily accessible could be inviting danger.

To our elected representatives, we solicit yoor support in opposing this site and would welcome any actions on your part

To the engineers with the Montana Department of Highways, we trust that sound judgement, intelligent decision making, and common sense prevail A major freeway interchange does not belong adjacent to an elementary school playground.

Sincepely,

Chip Stoecker
Chairman, Board of Trustees
Canyon Creek School, District #4

TAMARACK
PROPERTIES
Suite 538 • 2929 3rd Avenue North • Billings, Montana • 59101 • (406) 252-3907

December 22, 1989

Mr. David S. Johnson, P.E.
Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620

Re: Shiloh Road Interchange

Dear Mr. Johnson:

Because of a conflicting schedule I was unable to attend the recent scoping meeting regarding the above mentioned subject. I did follow the meeting through an associate who attended and by nature of this letter I would like to register the following comments as to why I strongly believe the interchange should be located slightly east of the present Shiloh Road overpass:

A) It appears that an appropriately sized, and "vacant" area exists on both the north and south sides of I-90 to accommodate the interchange.

B) Because the area is generally "vacant", the land acquisition costs should be lower.

C) Few if any residents or businesses would need relocating.

D) This location is a practical distance from the West Billings existing Interchange and would directly tie into the existing Shiloh Road.

E) The present day and foreseeable future population of West Billings would be substantially better served by an interchange in this location.

F) A significantly smaller amount of Frontage Road or connecting streets/roads would be needed at this location. This would also result in not only lower intitial costs but lower ongoing maintenance costs.

G) Fewer bridges would be needed which again effects initial and future maintenance costs.

H) If areas to the west are closely examined, both a residential neighborhood and a school are negatively impacted.

I) Presumably overall costs for an interchange in this location would be lower than alternate sites.

J) Because this location is by far a more direct route to I-90, less fuel will be consumed, by users, forever.

K) Since an interchange will create vehicle traffic, and the impacts that come with traffic, it appears that this location is better zoned to receive the traffic impact as compared to the residential and school areas further to the west.

I have enclosed a copy of a vicinity map with the suggested future interchange location highlighted in yellow.

Thank you for the opportunity to comment at this stage of planning for the future Interchange. Please place my name on the mailing list for notices regarding this project.

Sincerely,

Gregory C MacDonald

Gregory C. MacDonald

GCM/ns

Enclosure

MAX BAUCUS
MONTANA

WASHINGTON DC
(202) 224-2651

MONTANA TOLL FREE NUMBER
1-800-332-6106

United States Senate

WASHINGTON, DC 20510

RECEIVED
JAN 1990
MKM ASSOCIATES

December 26, 1989

Sent to Consultant
1-3-90

Mr. Larry W. Larsen
Director
Montana Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Dear Mr. Larsen:

I am sending the enclosed communication from one of my constituents for your consideration. I would very much appreciate your comments on this matter.

Please direct your reply and any questions to my Billings field office:

Senator Max Baucus
202 Fratt Building
2817 - 2nd Avenue North
Billings, MT 59101
(406) 657-6790

Thank you for your assistance.

With best personal regards, I am

Sincerely,

Max Baucus

MSB/mmk
Enclosure

Date Recd. Preconst. 1/2/90

Act	Info	MAIL ROUTE	Attach	Initial
		30 Preconst Engr		
		30 Assistant		
		30 Office Mgr		
		32 Road Design		
		33 Environment		
		34 Hydraulics		
		35 Survey & Mapping		
		36 Traffic		
		Consultant		
		Ventura		

BILLINGS (406) 657-6790 · BOZEMAN (406) 586-6104 · BUTTE (406) 782-8700 · GREAT FALLS (406) 761-1874 · HELENA (406) 449-5480 · KALISPELL (406) 756-1159 · MISSOULA (406) 329-3123

Canyon Creek School

School District No. 4
3139 Duck Creek Road
Billings, Montana 59106

1989 DEC 14 PM 2:19

December 8, 1989

RE: IR 90 -8 (114)443
Shiloh Road Interchange

As school board chairman of Canyon Creek School District #4, located west of Billings, in Yellowstone County, I have received numerous inquiries regarding the status of the "Shiloh Road" interchange project. There are many affected homeowners as well as Canyon Creek School that have concerns regarding this project. The Board of Trustees of Canyon Creek School District in its regular public meeting on July 20, 1989 voted to oppose the Duck Creek Road site for the interchange and instructed the principal to send a letter to the Montana State Department of Highways. This project was discussed again at the school board meeting of August 21, 1989, and a second letter sent opposing the Duck Creek Road/48th Street West site.

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- Adjusting from freeway speeds (65 mph) immediately to a school zone (25 mph).
- Noise from Jake brakes and deceleration and its effect on classroom work or outdoor P.E. instruction.

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* Suspended asbestos particulate from trucks braking in a heavy braking area.
* Pedestrian and heavy bicycle users around a freeway interchange.
* Transients that hitchhike along freeways are found at interchanges. A school in plain sight and easily accessible could be inviting danger.

To our elected representatives, we solicit your support in opposing this site and would welcome any actions on your part.

To the engineers with the Montana Department of Highways, we trust that sound judgement, intelligent decision making, and common sense prevail. A major freeway interchange does not belong adjacent to an elementary school playground.

Sincerely,

Chip Stoecker
Chairman, Board of Trustees
Canyon Creek School, District #4

MONTANA TRADEPORT AUTHORITY
P O Box 35000
Billings, Mt. 59107
Jul. 5, 1990

Mr. Roy Ventura
District Engineer
Montana Department of Highways
P O Box 20437
Billings, Mt. 59104

Dear Mr. Ventura:

At a special meeting last Tuesday, July 3, 1990, the Montana TradePort Authority fully endorsed the Shiloh Interchange and urges the Highway Department to give very serious consideration to its construction. The economic impact on Yellowstone County will be most important.

Sincerely,

George H. Selover
Chairman

GHS/sk

BILLINGS DISTRICT
1 District Engineer
Chief Engineering Services Supv.
C Engineering Services Supv.
Utilities Agent
Right of Way
Personnel Spec.
Payroll
C Bob Sivertsen
2

CITY OF BILLINGS
PUBLIC WORKS DEPARTMENT
510 N BROADWAY - 4TH FLOOR
BILLINGS, MT 59101
PHONE (406) 657-8230

FEB 1990
ASSOCIATES

Date Recd. Preconst. 1/30/90

Act	Info	MAIL ROUTE	Attach	Initial
	✓	30 Preconst Engr		
	✓	30 Assistant		
		30 Office Mgr		
		32 Road Design		
		33 Environment		
		34 Hydraulics		
		35 Survey & Mapping		
	✓	36 Traffic		
		39 Consultant		

January 24, 1990

Steven Kologi, P.E.
Reconstruction Bureau
Montana Department of Highways
2701 Prospect
Helena, Montana 59620

REFERENCE: IR90-8(114)443
Shiloh Road Interchange

Dear Steve:

In response to your July 3, 1989 letter to concerned parties on this project, I would like to go on record as expressing a concern that any interstate location include adequate connections to the existing Shiloh Road alignment. For example, it would do little good to build an interchange at the 48th Street West location if we could not obtain funding or adequately construct a north frontage road to tie this to the Shiloh Road location. Thus, any alternate from this Shiloh Road location should include the work that would be necessary to build a frontage roads and tie it into our existing arterial system.

I would point out that the Shiloh Road is the only major arterial on the West End that extends from Rimrock Road directly to the interstate highway. This serves as a vital transportation link and connects to the Zimmerman Trail access to the State Secondary 3. Thus, the creation of a interchange at or near Shiloh Road should be complete and include the connections to our existing arterial system.

The present intersection of Shiloh Road and Neibauer Road is also a key intersection in that a future extension of Gable Road and a direct connection into the Tierra Yellowstone-Cenex Park Industrial area is contemplated and could be constructed with local funds. However, the construction of an interchange further west without adequately addressing the connection to the Shiloh-Neibauer area would make the interchange less useful for local transportation.

Please do not take this expression of concern to mean that a location further west from Shiloh Road would not be a good design. I merely wish to have any location that does not tie directly to Shilon evaluated on full costs which would include the cost of frontage roads or other construction necessary to tie it into our transportation system rather than simply the cost of the interchange without any other considerations to the transportation system which is the responsibility of the local government.

If you have any questions on this or wish to discuss it, please contact me.

Sincerely,

Ken Haag, P.E.
Director of Public Works

KH:csb

cc: Alan Tandy, City Administrator

CITY OF BILLINGS
PUBLIC WORKS DEPARTMENT
510 N. BROADWAY 4TH FLOOR
BILLINGS, MT 59101
PHONE (406) 657 8230

July 10, 1990

Roy Ventura, Jr., P.E.
District Engineer
Montana Department of Highways
P. O. Box 20437
Billings, Montana 59104-0437

Dear Roy:

I am writing this letter to inform you that the City Council of the City of Billings and Norwest Trust Corporation have reached an agreement for the dedication of additional frontage road (Gable Road) right-of-way for the Shiloh Road interchange. I feel that this transaction represents, again, the public/private partnership which further demonstrates the local support that we have for the continuation of the Shiloh Road interchange project.

I would hope that this good faith demonstration of support for this project can be noted in the public hearing minutes from the July 11, 1990 public hearing meeting.

I would point out that the dedication of this frontage road right-of-way by Norwest moves a long way towards implementing the overall transportation arterial system in the western side of Billings which has been identified through our transportation planning process. The Shiloh Road interchange would connect very comfortably to this alignment and provide the continuity of arterial network in west Billings which would be necessary to assure the full utilization of a Shiloh Road interchange. The attached letter from Norwest and the map show the right-of-way in question. I would point out that this right-of-way will provide the integral link directly to Gable Road and the 24th Street West corridor, as well as tying into the 32nd Street West arterial corridor and the Shiloh corridor.

If you have any questions or wish to discuss this, please contact me.

Sincerely,

Ken Haag

Ken Haag, P.E.
Director of Public Works

KH:csb

BILLINGS CHAMBER OF COMMERCE.

RECEIVED
JUL 12 1990
HKM ASSOCIATES

July 10, 1990

John A. Shoff, T.E.
HKM Associates
Airport Industrial Park
P.O. Box 31318
Billings, MT 59107

Dear Mr. Shoff:

We are writing this letter regarding the Interstate 90 Shiloh Road Interchange. The Billings Chamber of Commerce wishes to again state its strong support for the Interstate 90 interchange proposed for Shiloh Road near Billings.

In connection with HKM Associates scoping study for the interchange location, the Billings Chamber of Commerce supports the Alternate D interchange location (east of the existing overpass). The Billings Chamber of Commerce supports this location after monitoring the development of this project for many years and examining the four proposed locations. Some of the reasons that the Chamber of Commerce supports this location include:

1. Alternate D provides excellent access to Shiloh Road. Such a direct connection to the existing arterial system is a very important consideration for the City of Billings.

2. The Alternate D location provides for possible future extension of Gable Road and a connection with the Tierra Yellowstone-Cenex Park industrial area.

3. Alternate D provides a good access to the ZooMontana site.

4. Alternate D provides a minimal disruption to existing residences and businesses. Also, this alternative will not involve a traffic safety hazard for the Canyon Creek School or other residential areas.

We hope that this information is useful in completing your planning study and in designing the interchange. Thank you for your consideration of this matter.

Sincerely,

Bruce J. MacIntyre, Vice Chair
Public Affairs Council

PWH/lsm

xc: Roy Ventura

815 So. 27th St. • P.O. Box 31177 • Billings, MT 59107 1177 • (406) 245 4111 • FAX (406) 245 7333

YELLOWSTONE COUNTY BOARD OF PLANNING

4TH FLOOR LIBRARY BUILDING • 510 N. 28TH
PO BOX 1178 • BILLINGS MONTANA 59103
PHONE (406) 657 8246

July 11, 1990

Mr. Roy Ventura, Jr., P.E.
Billings District Engineer
Montana Department of Highways
P.O. Box 20437
Billings, MT 59104-0437

RE: Shiloh Road Interchange

Dear Roy:

I am writing on behalf of the Yellowstone County Board of Planning with regard to the proposed Shiloh Road interchange. As you know, the Board of Planning is the designated Metropolitan Planning Organization (MPO) for the Billings urbanized area. As such, the Board is charged with the responsibility for carrying out a certifiable program for transportation planning. This is a comprehensive, coordinated and cooperative program involving the City of Billings, Yellowstone County, Board of Planning, Montana Department of Highways, and the Federal Highway Administration.

The Board has historically been committed to the construction of this important project. This commitment has been consistently demonstrated through the Board's recommendations on past Transportation Improvement Programs (T.I.P.'s) as well as the 1990 Transportation Plan for the Billings Urbanized Area. The 1991-95 T.I.P. clearly illustrates this point with the Shiloh Road interchange project identified as the top priority among four local interstate projects.

Once we have prioritized projects within the planning process, we work directly with MDOH on programming the various project components into the T.I.P.. This includes design, right-of-way aquisition, funding, and construction. Clearly, we rely on MDOH for direction and commitment in our program development. Accordingly, we proceed locally based on that commitment. As an example on the Shiloh Road project, a local commitment of $150,000 has been made as well as a public/private commitment on the right-of-way and construction of the north frontage road which would tie directly into the interchange site. This particular commitment greatly enhances the total project, as well as the overall transportation network on the west end.

The Board's principal interest is in seeing the Shiloh Road interchange become a reality. Towards that end, the Board is dedicated to providing assistance and meaningful input wherever possible to ensure that the project proceeds on schedule. Perhaps most importantly, the Board desires to see the project built so as to maximize the community's benefit while minimizing the adverse impacts on existing land uses and the environment. The two key factors related to those goals are location and design. It is the locational consideration that we wish to address at this time.

In terms of the four alternate locations under consideration, the Board unanimously supports Alternate D. Of all of the potential sites, this location would create the least impact to existing land uses in the area, and in addition, would allow future land use to develop in accordance with locally adopted planning goals and objectives. The other three locations would involve negative impacts to either residences or businesses or the Canyon Creek School. Additionally, Alternate D would provide excellent access to the ZooMontana facility, and to future commercial/industrial development within the area. The zoning pattern in this area has been established for both commercial and light industrial uses.

The direct connection to Shiloh Road, as proposed with Alternate D, would help to facilitate development in this area. This, in conjunction with the future North Frontage Road extension from the Tierra-Yellowstone/Cenex Park industrial sites would provide a more viable street network, thus enhancing the potential marketability of the properties. The direct link to the interstate system is a critical consideration for many prospective buainesses. Therefore, important economic development implications are involved as well.

The Shiloh Road connection is vitally important in terms of both use and function. Shiloh Road is designated and functions as a major arterial street, as classified in the 1990 Transportation Plan. It is also the only major north/south arterial on the west end of Billings that provides a continuous link from I-90 to Rimrock Road. In addition, Shiloh Road itself is targeted for reconstruction in the 1990 Plan. This would involve an estimated $5 million for reconstruction to a four-lane divided roadway with new signals at all major intersections. Therefore, the direct connection of the interchange to Shiloh Road would correspond well to local planning efforts.

In closing, we would like to once again strongly support the Shiloh Road interchange project, and specifically, the Alternate D location. I would like to thank you on behalf of the Board of Planning for the opportunity to comment on this important project, and for all of your help and support in seeing it become a reality.

Sincerely,

Bill Armold
Planning Director

BILLINGS NURSERY, INC.
7900 South Frontage Road
Billings, Montana 59101

July 11, 1990

Mr. David S. Johnson, P.E. Chief
Preconstruction Bureau
MONTANA DEPARTMENT OF HIGHWAYS
2701 Prospect Avenue
Helena, Montana 59620

Re: IR 90-8(114)443 Shiloh Road Interchange

Dear Mr. Johnson:

It is with the greatest pleasure and relief that Billings Nursery, Inc. enthusiastically endorses the selection of Alternate D, the "KGHL site," as the best alternate site for the new Shiloh Road Interchange.

This site, between the KGHL radio towers and Goodman Lane, should have no negative impact on Billings Nursery, and should ultimately help us by providing more convenient access for our-of-town customers.

I congratulate the Montana Department of Highways and HKM Associates for their thorough environmental impact studies, and for their openness and receptiveness to citizen recommendations.

The earliest possible official designation of Alternate D as the new Shiloh Road Interchange site should solidify the people of Billings and Yellowstone County in our complete and enthusiastic support of this project. I urge you to take this action as soon as possible.

Sincerely,

Robert E. Marble, President
BILLINGS NURSERY, INC.

ZOOMONTANA
ZOOLOGICAL GARDENS

RECEIVED
JUL 19 1990
HKM ASSOCIATES

July 11, 1990

John A. Shoff, T.E.
HKM Associates
Airport Industrial Park
Post Office Box 31318
Billings, Montana 59107

Dear Mr. Shoff:

On behalf of the Board of Directors of ZooMontana, I want to express ZooMontana's strong support for construction of the Shiloh Road Interchange. We are anxious for a decision on the specific location of the access so that plans can be finalized and construction may begin.

ZooMontana is joining forces with the community to support the Alternate D location near the former KGHL Radio station. We have followed this issue very closely and have been educated about alternate D specifically by highway department officials. Considering all options, this appears to be the most desirable and feasible solution. Naturally, our main concern is to secure easy access to ZooMontana for visitors using Interstate 90.

Preliminary estimates show that ZooMontana will favorably impact our economy by over $6 million annually and will create several new jobs. The zoo will significantly add to our educational and recreational base. Construction of this much needed interchange will help to insure our success.

Sincerely yours,

William R. Lowe

William R. Lowe, Vice Chairman
ZooMontana, Inc.

cc: Roy Ventura, District Engineer
Montana Department of Highways

POST OFFICE BOX 955 • BILLINGS, MONTANA 59103 • 406 252 7100

County of Yellowstone

COMMISSIONERS

(406) 256-2701

Box 35000
Billings MT 59107

July 11, 1990

The Yellowstone County Commission has been on record for over five years in support of Shiloh Interchange. The need for another interchange to serve the West end of Billings cannot be argued.

The Commission supports Alternate D of the Highway Department's alternatives for the following reasons:

1. It coincides will with the approved transportation plan for Yellowstone County.
2. It leaves the existing Shiloh Road overpass in place which enables the public to easily access the South Frontage Road.
3. It fits into the City of Billings' plans for Gabel Road.
4. It does not impact business or residential areas to the extent that other alternates may, therefore R/W costs should be reduced.

Very truly yours,

BOARD OF COUNTY COMMISSIONERS
YELLOWSTONE COUNTY, MONTANA

Dwight MacKay, Chairman

Grace M. Edwards, Member

Mike Mathew, Member

GME/df

KGHL 790AM
magic 98FM

RECEIVED
AUG - 1 1990
HKM ASSOCIATES

Mr. John Shoff, P.E.
HKM Associates
Billings, Mt. 59107

July 30, 1990

Dear Jonn:

This is to acknowledge receipt of your recent mailing of the two copies of the 1"=200' scale map, showing the tower site of KGHL in relationship to two proposed locations of the Shiloh Road interchange.

I will compare the parameters of the proposed new interchange with the original proof of the directional antenna system as to the feasibility of construction without a major move or drastic change of the existing radio facility; and will be keeping in touch with you and HKM Associates.

Thankyou.

Sincerely,

Donald L. Peck
Chief Operator,
Sunrise Montana, Inc.

2070 Overland Avenue, Suite 103, Billings, MT 59102 (406) 656-1410, Fax (406) 656-0110

UNITED STATES ENVIRONMENTAL PROTECTION A
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2405

Ref: 8HWM-SM

Mr. John Shoff, P. E.
HKM Associates Engineers/Planners
Airport Industrial Park
P. O. Box 31318
Billings, Montana 59107

Re: Freedom of Information Act
(FOIA) Request
(8)RIN-0935-90

Dear Mr. Shoff:

As requested in your letter dated July 25, 1990, we are enclosing a SCAP 11 and a List-8 Site/Event Listing both for the State of Montana.

The List-8 and SCAP 11 reports were obtained from our national database known as the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). CERCLIS is a data base which lists all uncontrolled hazardous substance sites known to the Environmental Protection Agency which meet the specific criteria under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Once on CERCLIS, the sites are targeted for pre-remedial work. The Event Type column indicates which events have been or are presently being accomplished. Enclosed you will find a list of the abbreviations used to indicate these events. The Event Lead code indicates the organization with primary responsibility for conducting or overseeing the event.

If you have any questions regarding this material, please contact Linda Wheeler at (303) 293-1820.

Sincerely,

Charles W. Mooar, Chief
Superfund Management Branch

Enclosures

cc: Freedom of Information Officer (8OEA)

FEDERAL COMMUNICATIONS COMMISSION
Field Operations Bureau
Seattle Field Office
One Newport Room 414
3605 132nd Avenue S.E.
Bellevue, Washington 98006
(206) 764 3324

8/08/90

John A. Shoff, P.E.
HKM Associates
P.O. Box 31318
Billings, MT 59107

RE: IR 90-8(114)443
Shilo Road Interchange

Ref: 8/07/90 phonecon between you and Engr. Anderson, FCC/Seattle

Dear Mr. Shoff:

This letter formalizes our discussion during the referenced telephone conversation. The proposed road work that the State of Montana is planning in the area of KGHL radio should have little impact on the operational characteristics of the station. The Commission would become concerned if the proposed structure was to disrupt the continuity of the ground radials around either of the radio towers, or if it were tall enough to effect the directional radiation pattern of the station.

It appears that only your "Alternate D" plan might have the potential of adversly effecting KGHL radio. In this plan the "Alt.S.F.R." frontage road would protect the integrity of KGHL's ground radials. The height of the interchange road over the highway is only 35 feet above ground, so we do not anticipate any problems in that area either.

I hope this information in helpful for you. If we can be of further assistance please don't hesitate to call.

Sincerely,

Dennis J. Anderson, P.E.
Investgative Engineer

DJA;da
copy: KGHL/KDIX

KGHL 790AM
magic 98FM

Mr. John Shoff, P.E.
HKM Associates
Billings, Mt. 59107

August 17, 1990

Dear John:

It appears that Dennis Anderson of the Seattle office of the F.C.C. confirms what we have been discussing the past few weeks in regards to the proposed Shiloh Road interchange; that alternate "D" would not be feasible because of the extreme close proximity to the KGHL transmitter-tower site, that alternate "S.F.R." would be workable.

The additional problems that might be encountered (lighting poles, etc.)could be neutralized on an individual basis as far as r.f. propagation is concerned. The additional costs for the State of Montana would be proportionately small in relation to the entire road project.

Please keep me posted on the latest developments.

Thank You.

Sincerely,

Donald L. Peck
Chief Operator,
Sunrise Montana, Inc.

2070 Overland Avenue, Suite 103, Billings, MT 59102 (406) 656-1410, Fax (406) 656-0110

RECEIVED

HKM ASSOCIATES

August 4, 1990

Shane Patterson
7000 Whitetail Lane
Billings, Mt 59101

Gentlemen:

Let me take this opportunity to voice my strong opposition to the purposed interchange at Shilon Road between Sillings and [illegible]

ONE: The Frontage Road is meant to primarily serve the rural community and all people that live along the southern side of Interstate 90. An interchange would serve them no purpose.

TWO: The increase traffic this new interchange would create would pose a serious safety hazard to the locals that must access this road. West bound truck traffic would have one more place to dodge the Laurel scale as the frontage scale is often closed when the interstate scale is open. This problem exist now but the new interchange would even worsen matters.

I shouldn't need to tell you that this interchange is like pouring gas on a fire. High speed, overweight trucks, over hours drivers rushing to make a buck and a Frontage Road used by farmers to move tractors and other slow moving equipment plus other community people pulling off and on, this Frontage Road, the fact that many school childern ride their bikes to and from school on this route, I don't think you have to be a rocket scientist to figure out your jeopardizing Life and Limb.

THREE: These damned state roads and bridges are a mess and I as a tax payer strongly oppose the use of my tax dollars for constrution of an interchange when the money could be much better spent to repair what we already have.

Sincerely,

Shane Patterson

Shane Patterson

Sent to Consultant
8-7-90
B.C. Gerhardt

Act	Info	MAIL ROUTE	Attach	Initial
		30 Preconst Engr		
		30 Assistant		
		30 Office Mgr		
		32 Road Design		
		33 Environment		
		34 Hydraulics		
		35 Survey & Mapping		
		36 Traffic		
		39 Consultant		

Technical Equipment Company
RSVP Division
P.O. Box [illegible]
Billings, MT [illegible]
(406) 656-3444
FAX (406) 656-6993

RECEIVED
AUG 13 1990
HKM ASSOCIATES

Sent to Consultant
8-10-90
B.C. Gerhardt

8/6/90

Montana Department of Highways
Preconstruction Bureau
2701 Prospect Avenue
Helena, MT. 59620

Attention: David S. Johnson, P.E.

Subject: Shiloh Road Interchange

Dear Mr. Johnson:

I am concerned about the proposed location of the Shiloh Road Interchange. All of the news concerning the project indicates that Alternate "D" seems to be the favorite location at this time.

I question the merit of this location, because its so close to the present interchange at the Holiday Inn. People would not have much reason to use it when the other interchange is only one mile away. A better solution would be an interchange further west in the 56th Street West area.

This would truly serve the western part of Billings. I understand that you are planning to leave the Shiloh Road Overpass. Therefore an interchange west of the present overpass would still service the Montana Zoo location for people coming from the west and service west Billings.

I urge you to reconsider your present "favorite" site location. I don't feel that you will have utilized our money as best you can, if you don't.

Thank you for your time and consideration.

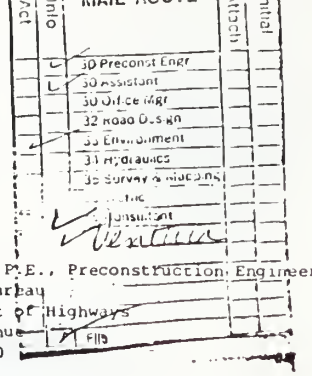
Respectfully,

Bill Starr

Bill Starr, P.E.

Date Recd. Preconst. 8/8/90

Act	Info	MAIL ROUTE	Attach	Initial
	✓	30 Preconst Engr		
	✓	30 Assistant		
		30 Office Mgr		
	✓	32 Road Design		
		33 Environment		
		34 Hydraulics		
		35 Survey & Mapping		
	✓	36 Traffic		
	✓	39 Consultant		
	✓	Montana		
		File		



Everett and Pamela Gabel
2530 Goodman Road
Billings, MT 59101

August 8, 1990

David S. Johnson, P.E., Preconstruction Engineer
Preconstruction Bureau
Montana Department of Highways
2701 Prospect Avenue
Helena, MT 59620

Mr. Johnson:

We oppose Alternative D, KGHL radio station location for the proposed I90 interchange west of Billings for the following reasons:

(1) There are no through roads south of I90 and the frontage road providing access to areas south of the interstate. The closest road going south is Goodman Road which is a dead end.
(2) You would have to go way to the north and then backtrack to get south of I90 which will be confusing.
(3) It is much too close to the existing King Avenue West interchange. Within a short period of time, Billings will see the need for another interchange west of town if the proposed one is built too close to King Avenue interchange.
(4) It will be too expensive to build considering the cost of land this close to the city limits and the need to pipe many irrigation ditches that would be affected.
(5) The current drawings show this interchange being huge. We live in the area and farm the land that the interchange would be built on. It would be ruining a lot of the most productive agricultural land in the valley.
(6) Many of the people who live in this area are unaware of the plans for Alternative D. There was no notification that this was a consideration and therefore they did not attend the meeting in July to express their opposition to the location.

Since it has come to our attention that 56th Street West is not being considered as an alternative, we support Alternative C, Shiloh Overpass location for the following reasons:

(1) There is access to areas south of the interstate by way of Wise Road, which connects with Rudio Road and 48th Street West. When Duck Creek bridge is replaced in the near future this interchange would provide for growth and I90 access not only south of the interstate, but also allow for future development of areas south of Duck Creek bridge and the river. Alternative A also has the same advantages.

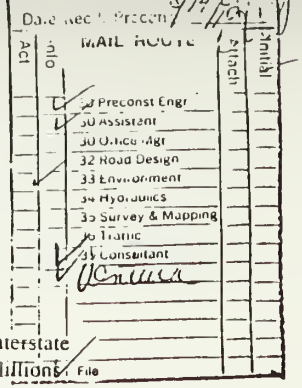
(2) This interchange would lead directly to Shiloh road without having to purchase a lot of land to put in additional new roads to provide access to Shiloh Road.
(3) It would be the ideal interchange to promote and provide access to Zoo Montana.
(4) It is far enough away from the King Avenue West interchange to provide traffic congestion relief and access to and from the west end now while allowing for future growth and development west of Billings.

Thank you for your consideration.

Sincerely,

Everett Gabel
Pamela Gabel

Francis Flynn
Flynn Co. Inc.
2302 South 40th Street West
Billings, Montana 59106



Issues that are significant:

Advantages to Site "C" —

1) Site "C" would be the shortest and most direct route to the Interstate as most users would be going to or arriving from the west. Millions of miles would be saved over the life of the project.

2) Connection of the interchange directly to Wise Lane would benefit everyone along this route, especially Oscar's Dreamland.

3) This site would also provide the best connection (2 1/2 miles) to the new Duck Creek Bridge, with minor road improvements. This would eliminate a great deal of the traffic past Canyon Creek School.

4) This is the ideal site for Elk River and, with some North Frontage Road construction, not bad for Simplot, Roscoe Steel, Holland Loader, etc.

5) Site "C" would require the least amount of new right of way and the fewest miles of new road construction.

6) Site "C" is a more central location..

7) Site "C" requires the least amount of change from existing travel path.

Issues that are not significant:

The main support for Site "D" at the last Scoping Meeting was from Billings Nursery, Zoo Montana and the Yellowstone County Commissioners. In my opinion, Site "C" would work equally well or better for both the nursery and the zoo. I did not understand the Commissioners' preference for Site "D."

RECEIVED
SEP 10 1990
HKM ASSOCIATES

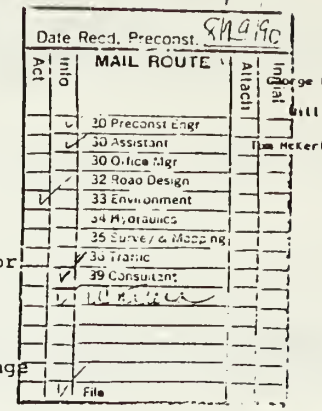
Montana TradePort Authority

401 N. 31st Street, Room 550
P.O. Box 7132
Billings, MT 59103-7132
(406)259-9003

BOARD OF PORT COMMISSIONERS

Nick R. Cladis
Kay Foster, Vice Chair
Douglas Richardson
Laurance E. Ridle
Donald K. Roberts

George M. Selover, Chair
Richard Skews
William W. Strausburg
Al Swanson
Tom McKerlick, Interim Dir



August 23, 1990

Mr. Larry Larson, P.E., Director
Montana Department of Highways
2701 Prospect Avenue
Helena, Montana 59620

Re: Shiloh Road/I-90 Interchange

Dear Mr. Larson:

The Montana Tradeport Authority would like to go on record in favor of Option "D" for the Shiloh Road Interchange with I-90. This location, lying east of the existing Shiloh Road overpass and near the KGHL Radio tower, would seem to be the most viable location for an interchange and would immediately access one of our larger industrial areas.

The Montana Tradeport Authority strongly believes that an interchange is critical to this area west of Billings--both to encourage the continued expansion of Billings to the west, and probably just as important, to accommodate the growth that has already taken place in that area. There is no question that transportation needs are not currently being met. We are also informed that Option "D" will address the concerns of the Yellowstone County Transportation Plan.

We appreciate this opportunity to input to your planning process.

Sincerely,

George Selover, Chairman

ZOOMONTANA
ZOOLOGICAL GARDENS

December 21, 1990

Roy Ventura, District Engineer
Montana Department of Highways
Billings District
424 Moore Lane
Billings, Montana 59101

Dear Roy,

The ZooMontana Board of Directors has reviewed the latest plan for the Shiloh Road interchange north connector road configuration. We are pleased that the planning process is moving forward.

Based on the assumption that the alternate "D" location is selected for the interchange, we support the prooosal as approved by the Billings Technical Advisory Committee (T.A.C.) for the north connector road plan. The condition for our support is that the access road to Shiloh must be completed with the interchange construction package.

We feel that by supporting this access plan, completion of the interchange may be expedited. We need the Shiloh interchange access to ensure the zoo's success.

Sincerely,

Wayne Schile, Chairman
ZooMontana, Inc.

cc: John Shoff, HKM Associates

P.O. Box 30058 • Billings, Montana 59103 • 406-252-2400

Norwest Capital Management
Trust Co., Montana
P.O. Box 30058
Billings, Montana 59117

NORWEST CAPITAL MANAGEMENT

Robert M. Nelson
President and Chief Executive Officer

Norwest Capital Management and
Trust Co., Montana
Norwest Bank Building
Post Office Box 30058
Billings, Montana 59117

December 17, 1990

Mr. Roy Ventura, District Engineer
Billings District
Montana Department of Highways
424 Morey Lane
Billings, MT 59101

RE: Proposed Shiloh Road Interchange
Alternate "D", North Connector

Dear Mr. Ventura:

Norwest Capital Management & Trust Co., Montana owns approximately 52.5 acres of land (Proposed Amended Plat of C/S 1147) that will be affected by alignment of the approach road to the above captioned project. We want to directly inform you of our feelings and intentions about the project as described on the enclosed drawing.

Our position is that Norwest Capital Management is prepared to support the proposed connector road alignments and dedicate all the described R.O.W. (approximately 6+ acres) through our land in the event that an agreement is obtained wherein all the connector roads are constructed as part of the interchange project, or earlier, at no additional cost to Norwest Capital Management or other landowners in the area.

We feel that the alignment as shown allows us enough flexibility to replan and develop the property in a satisfactory manner.

If you have any questions or observations, we would be delighted to hear from you. We are eager to see this development become a reality and wish to finalize matters as quickly as possible in order to gain some direction in our marketing effort.

Sincerely,

R. M. Nelson

RMN:ej

cc: John Shoff
H.K.M. Associates

COPY

TAMARACK
PROPERTIES
Suite 538 • 2929 3rd Avenue North • Billings, Montana • 59101 • (406) 252-3907

December 21, 1990

Mr. Roy Ventura, District Engineer
Billings District
Montana Department of Highways
424 Moore Lane
Billings, MT 59101

Re: Proposed Shiloh Road
Interchange

Dear Mr. Ventura:

As managing partner for Midland Empire Industrial and Commerce Center, owner of the remainder of the northeast quarter of section 23, and as representative for the owners the northwest quarter of section 23 (both parcels located immediately east of Shiloh Road and immediately south of Hesper Road) (the parcels containing approximately 110 acres and 160 acres respectively) I am writing to you for the purpose of providing land owner input and commenting on related matters concerning the above mentioned subject.

First, for practical reasons we strongly feel that the Alternate "D" Interchange location is by far the best location to serve the City of Billings, the surrounding area and the general population of Billings. We urge you and your department to select this location and begin the process of design, funding, right of way acquisition and eventual construction.

As owners of the land that will be most affected by construction of an interchange in the Alternate "D" location, we will consider and diligently work toward providing the right of way to the highway department at no cost to the highway department if in our opinion the following conditions can be met:

1. Agricultural water and drainage systems will not be interrupted, negatively impacted and will when necessary be moved or realigned at project expense and with our consent on alignment or placement.

2. All necessary permits, studies and related activities will be the responsibility of and the cost of the project.

3. Work necessary to alter, amend or create new easements, surveys, platting or right of way will not be at land owner expense.

4. The granting of right of way, at no cost, will be subject to and contingent upon releases from existing mortgages, liens, leases or other encumbrances.

5. The proposal to grant, at no cost, the right of way is contingent upon the connecting roads, as illustrated on the attached drawing, being built at no cost to land owners at the same time construction of the Interchange in Alternate "D" location occurs and in accordance with the indicated dimensions of right of way length and width. Additionally, the granting of right of way, at no cost, is subject to our review and consent of the design and alignment of the connecting roads and that the alignment of connecting roads be suitable for future extension of City of Billings water and sanitary sewer systems.

6. While we do not object to the connecting roads being designed with higher design speed criteria we condition our proposal to actual posted speed limits being commensurate with local Industrial/Commercial city speed limits. An example being the existing Gable Road located east of Alternate "D" location in Cennex Subdivision.

7. The granting of right of way, at no cost, is also conditioned upon future access to the connecting roads. For example we do not expect unlimited access to the roads, but rather controlled access commensurate with City of Billings collector street standards.

8. Fence reconstruction and damage to crops existing at the time of construction are presumed to be costs of the project.

We would hope that our support of the much needed Interchange project and the Alternate location "D" is apparent and it is understood that we are prepared to donate the right of way as previously mentioned if the above mentioned conditions can be met and if we as land owners and

the Department of Highways can mutually agree on all conditions with respect to the potential construction of an interchange and connecting roads at this location. Thank you and if you have any questions please contact me.

Sincerely,

Gregory C MacDonald

Gregory C. MacDonald

GCM/ns

cc: John Shoff
H.K.M. Associates

U S Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: 2-11-91
Name Of Project: Shiloh Road Interchange	Federal Agency Involved: FHWA
Proposed Land Use: Construction of Highway Interchange	County And State: Yellowstone, MT
PART II *(To be completed by SCS)*	Date Request Received By SCS: February 19,1991

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form)*	Yes [X]	No [ ]	Acres Irrigated: 112,000	Average Farm Size: 293 AC
Major Crop(s): Corn, Sugar Beets & Alfalfa	Farmable Land In Govt Jurisdiction: Acres 1,345,181	%80	Amount Of Farmland As Defined in FPPA: Acres 337,626	% 25
Name Of Land Evaluation System Used: LESA	Name Of Local Site Assessment System: NONE		Date Land Evaluation Returned By SCS: February 20,1991	

PART III *(To be completed by Federal Agency)*	No-Build Site A	Alternative Site Rating Site B	Site C1	Site C2	Site D
A Total Acres To Be Converted Directly	-0-	50	34	43	67
B Total Acres To Be Converted Indirectly	-0-	23	7	16	-0-
C Total Acres In Site	-0-	73	41	59	67
PART IV *(To be completed by SCS)* Land Evaluation Information					
A Total Acres Prime And Unique Farmland	162,676	162,676	162,676		162,676
B Total Acres Statewide And Local Important Farmland	160,060	160,060	160,060		160,060
C Percentage Of Farmland In County Or Local Govt Unit To Be Converted	--	--	--	--	--
D Percentage Of Farmland In Govt Jurisdiction With Same Or Higher Relative Value	--	--	--	--	--
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	100	100	100	100	100

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points					
1 Area In Nonurban Use	15	8	8	8	8	8
2 Perimeter In Nonurban Use	10	5	5	2	2	10
3 Percent Of Site Being Farmed	20	-0-	20	20	20	20
4 Protection Provided By State And Local Government	20	-0-	-0-	-0-	-0-	-0-
5 Distance From Urban Builtup Area	15	-0-	10	10	10	10
6 Distance To Urban Support Services	15	-0-	10	10	10	-0-
7 Size Of Present Farm Unit Compared To Average	10	-0-	-0-	-0-	-0-	8
8 Creation Of Nonfarmable Farmland	10	-0-	10	7	10	-0-
9 Availability Of Farm Support Services	5	-0-	5	5	5	5
10 On Farm Investments	20	-0-	5	15	15	5
11 Effects Of Conversion On Farm Support Services	10	-0-	-0-	-0-	-0-	-0-
12 Compatibility With Existing Agricultural Use	10	-0-	10	10	10	10
TOTAL SITE ASSESSMENT POINTS	160	13	83	87	90	76
PART VII *(To be completed by Federal Agency)*						
Relative Value Of Farmland *(From Part V)*	100					
Total Site Assessment *(From Part VI above or a local site assessment)*	160					
TOTAL POINTS *(Total of above 2 lines)*	260					

Site Selected	Date Of Selection	Was A Local Site Assessment Used? Yes [ ] No [ ]
Reason For Selection		

(See Instructions on reverse side)

Form AD-1006 (10-83)

RECEIVED

DEPARTMENT OF HIGHWAYS

HKM ASSOCIATES

STAN STEPHENS, GOVERNOR

2701 PROSPECT AVE.

STATE OF MONTANA

HELENA, MONTANA 59620

May 16, 1991

MAY 1991 /40

Marcella Sherfy
State Historic Preservation Officer
Montana Historical Society
225 North Roberts
Helena, MT 59620

Subject: IR 90-8(114)443
Shiloh Road Interchange
C# 1308

Enclosed is the Determination of Effect (DOE) for the above project. The MDOH will install a culvert-type crossing at the NRHP-eligible Canyon Creek Ditch (24YL891). We are requesting your concurrence that this project will have no effect on the ditch.

If you have any questions, please contact Jon Axline at 444-6258.

Edrie Vinson

Edrie L. Vinson, Supervisor
Environmental Section

ELV:JA:D:ENV:56.si

Enclosure

cc: D. S. Johnson
C. S. Peil
R. R. Newhouse
R. R. Ventura, Jr.
E. L. Vinson
File

CONCUR
PROJECT WILL HAVE
NO EFFECT ON HONP QUALITIES
MONTANA, SHPO
DATE 6/3/91 SIGNED

Fort to Consultant
6-11-91
[illegible]

Fish and Wildlife Enhancement
301 South Park
P.O. Drawer 10023
Helena, Montana 59626
Federal Building, U.S. Courthouse

11/13/91

FWE-61130-Billings
RE: IR 90-8(114)443
Shiloh Road Interchange

November 18, 1991

COPY

Mr. Robert E. Carroll
President & General Manager
Econ Inc.
130 Neill Ave.
Helena, Mt 59601

Dear Mr. Carroll:

This responds to your November 8, 1991 letter concerning certain minor changes in the proposed Shiloh Road Interchange (Alternate D), at Billings, Montana. Your letter requested that we review the proposed changes and update our July 13, 1989 letter concerning potential impacts on threatened or endangered species.

We have completed the requested review. We concur in your conclusion that no threatened or endangered species would be impacted.

Sincerely,

John F. Wood

Dale Harms
State Supervisor
For Montana State Office

cc: Suboffice Coordinator, USFWS, Fish & Wildlife Enhancement (Billings, MT)

JGW/jf

"Take Pride in America"

ECON
ECOLOGICAL CONSULTING SERVICE

ECON INC
130 Neill Ave
Helena Montana 59601
telephone
406 442-4650

November 8, 1991

Mr. Dale R. Harms,
Montana State F&WE Supervisor,
US Fish & Wildlife Service
Federal Building
301 South Park
P.O. Box 10023
Helena, MT 59626

COPY

Re: Shiloh Road Interchange, Alternate D, Billings

Dear Dale:

On July 3, 1989 Stephen Kologi, of the Montana Highway Department (MDOH) wrote your office giving notice of intent to develop an interchange at the juncture of Interstate 90 and Shiloh Road, Billings (or at an alternative location nearby). On July 13, 1989 Kemper McMaster, Acting State Supervisor, Montana State Office, FWS, provided a letter to MDOH saying FWS does not expect any project-related impacts to the bald eagle nor to the peregrine falcon (copy attached). On July 31, 1989 I wrote your office (copy attached) asking for an opinion and was provided a copy of Kemper McMaster's 7/13/89 letter to Stephen Kologi.

ECON personnel (Dr. Robert L. Eng and Mr. Phillip W. Johnson) worked the entire proposed interchange location and we submitted a *Wetlands Evaluation and Biological Assessment* to HKM Engineers on July 31, 1989, who provided it to MDOH.

In 1990 the engineering firm (HKM Associated) and MDOH added an alternative D location for the Shiloh Interchange (See attached Figure 1). Dr. Eng again scrutinized Alternate D and in his opinion, Alternate D carried no potential impacts to bald eagles, peregrine falcons nor any other listed species.

Dr. Eng also discussed the study area with Dennis Flath, of Montana Fish, Wildlife and Parks (MDFWP); and I discussed it with Roger Fliger, MDFWP Regional Supervisor. Neither felt any listed species would be impacted by any of the alternatives. We also routinely check our study areas for any vegetation and wildlife which may be listed on the Montana Natural Heritage Program annual print out.

We believe the phrase in Kemper McMaster's July 13, 1989 letter to Stephen Kologi stating "or at an alternative location nearby" certainly covered Alternate D. However, MDOH desires a specific concurrence from your office that Alternate D indeed poses no impact to a listed species.

Sincerely,

ROBERT E. CARROLL
President & General Manager

cc: Dr. Robert L. Eng
encls.

APPENDIX B - REFERENCES

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